

CANADA

REPORT

OF THE

MINISTER OF PUBLIC WORKS

ON THE

WORKS UNDER HIS CONTROL

FOR THE

FISCAL YEAR ENDED MARCH 31

1909

*Submitted in Accordance with the Provisions of Chapter 39, Section 34,  
of the Revised Statutes of Canada.*

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST  
EXCELLENT MAJESTY

1909



*To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey,  
G.C.M.G., &c., Governor General of Canada.*

MY LORD,

I have the honour to lay before Your Excellency the Report of the Department of Public Works of Canada, for the fiscal year ended March 31, 1909.

I have the honour to be,

My Lord,

Your Excellency's most obedient servant,

WILLIAM PUGSLEY,  
*Minister of Public Works.*

OTTAWA, September 21, 1909.





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REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE YEAR ENDED MARCH 31

1909



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DEPARTMENT OF PUBLIC WORKS,

OTTAWA, September 20, 1909.

HON. WILLIAM PUGSLEY,  
Minister of Public Works of Canada,  
Ottawa.

SIR,—I have the honour to submit, herewith, a report of the operations of the Department of Public Works for the fiscal year ended March 31 last.

### EXPENDITURE.

The total expenditure incurred by the department during the year 1908-9 amounted to the sum of \$14,784,739.39, charged as follows:—

Capital.. . . .	\$ 1,867,346 01
Income.. . . .	12,292,359 15
Revenue.. . . .	625,034 23

And classified under the different heads

Harbours and rivers.. . . .	\$ 3,305,920 32
Dredging.. . . .	4,547,773 43
Slides and booms.. . . .	137,086 57
Roads and bridges.. . . .	49,106 26
Public buildings.. . . .	5,845,286 70
Telegraphs.. . . .	535,480 12
Miscellaneous.. . . .	364,085 99

Total.. . . . \$14,784,739 39

The foregoing statement evidences the continued expansion of the work of the department. As the population increases and the services of the various departments of the government are extended, a demand is created for improved and more adequate

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accommodation in the form of public buildings, while the gratifying growth of the trade and commerce of the country renders absolutely necessary a large and constantly increasing expenditure to provide proper harbour and navigation facilities.

## REVENUE.

The total revenue for the year reached the sum of \$299,437.88, sub-divided as follows:—

Slides and booms. . . . .	\$ 76,455 41
Graving docks. . . . .	60,505 16
Rents. . . . .	23,268 44
Telegraph lines. . . . .	113,175 34
Casual revenue. . . . .	26,033 53
Total. . . . .	<u>\$299,437 88</u>

It is remarkable that this amount is almost identical with the collections of last year, exceeding them by only the very small sum of \$7.70. A falling off is noticeable in three divisions, slides and booms, graving docks and telegraph lines, but the amounts collected for rents and received from casual revenue have been augmented, making up the difference.

The revenue derived from slides and booms is subdivided as follows:—

Ottawa district. . . . .	\$40,390 99
St. Maurice district. . . . .	34,365 86
Newcastle district. . . . .	1,480 96
Saguenay district. . . . .	1,533 30
Total. . . . .	<u>\$77,771 11</u>

which represents a decrease of \$16,522.42 from the revenue of the last fiscal year, due principally to the large quantity of saw logs hung up in consequence of the unprecedentedly low water.

The following were the sources of revenue from graving docks:—

Esquimalt. . . . .	\$20,583 36
Kingston. . . . .	10,693 84
Lévis. . . . .	29,227 96
Total. . . . .	<u>\$60,505.16</u>

which is \$2,703.42 less than the preceding year. It may be said, however, that the shortage in graving dock revenue is not an altogether regrettable feature, as it means fewer accidents to vessels and consequently smaller loss to the shipping interest. It will be remembered that on the withdrawal of the Pacific Squadron in 1905, the revenue at the Esquimalt graving dock had dropped as low as \$4,632.54, since when, however, the dock has been doing a fairly good commercial business.

The increase in Canadian Lake Marine during the past few years has rendered absolutely necessary the construction of more and larger docks. With a view to encouraging private enterprise in this direction, an Act was passed during the session

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of 1903 whereby an annual subsidy of 3 per cent for a period of twenty years on the cost not to exceed \$1,000,000 might be paid to any company constructing a dry dock in accordance with plans first submitted to and approved by the Department of Public Works. During the session of 1908-9 an amending Act was passed making such subsidy payable on a sum not exceeding \$1,500,000. The first company to take advantage of the provisions of this Act was the Vancouver Dry Dock and Shipbuilding Company, with which the department entered into an agreement on the 31st day of May last for the construction of a floating dock in the harbour of Vancouver, having a length of 486 feet by 66 feet in width, with a tonnage of 11,000. The dock will be constructed in England by the well-known dock and shipbuilding firm of Swan & Hunter, and shipped in knockdown condition to Vancouver. Two other applications for subsidies are at present under consideration by the department, one from the Sault Ste. Marie Dry Dock and Shipbuilding Company, for the construction of a graving dock and shipbuilding and repair plant at Sault Ste. Marie, Ont., and the other from the Thunder Bay Dry Dock and Shipbuilding Company, for the erection of a floating dock at Port Arthur, Ont.

In this connection it may be mentioned that for some time the shipping interests have felt the need for a dock with thoroughly equipped repair plant on the lower lakes. The Kingston graving dock was constructed at a time when chartered companies would not build a dock. It has served its purpose up to the present, but of late years there has arisen a pressing demand for improved facilities.

It is well known that United States docks and shipyards have absorbed a good part of the business which would naturally come to Kingston if a satisfactory repair plant were installed. It is felt that the time has come when a private company, if in control of this dock, by establishing a modern repair and shipbuilding plant, would satisfy the demands of the shipping trade on the lakes and canals.

Business could then be solicited, special arrangements as to charges could be made and the dock and accessories could be handled more economically. A proposition to lease the dock has accordingly been receiving most careful consideration with the result that it has been decided to call for tenders for a twenty-one years' lease, subject to the requirements of the Dry Dock Act and conditional on the establishment by the lessee of a suitable repair plant capable of taking care of the largest vessels which could be accommodated by the dock.

## HARBOURS AND RIVERS.

The expenditure in this field of departmental operation, as has been noted above, amounts to \$7,853,693.75, including dredging, this sum being expended under the direction of the Chief Engineer and his capable staff of assistants throughout the Dominion.

Works of improvement, exclusive of dredging, have been carried on at 759 different points in the Dominion of Canada, from the Atlantic to the Pacific, comprising the construction of wharves, piers, breakwaters, dams, bridges, &c., and their repair and

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re-construction, a full account of which will be found in Part IV (4) of this report, which contains a description of each work, with details as to its character, purpose, extent and cost.

To this branch of the department is entrusted the improvement of Canada's system of water transit along the 1,500 miles of navigation which stretches from Montreal, an ocean port, to Port Arthur and Fort William, the head of lake shipping. The department is bending its energies to so improve Canadian harbours on the Great Lakes that the railways may avail themselves to the fullest extent of the Canadian route with its great natural water stretches, in conveying to ocean vessels the product of the vast western wheat fields. A gratifying measure of success has already attended the efforts put forth: even under present conditions the Canadian route is asserting its superiority and, as the improvement of what have now become national ports in Canada's transportation system continues, bringing them nearer and nearer to a state of full efficiency, it will inevitably become the supreme grain route.

The following comparative statement for the past six years of the acreage under wheat cultivation in the west and the annual yield illustrates the magnitude of the business to be handled:—

	Acres.	Bushels.
1903.. . . . .	3,280,107	56,145,497
1904.. . . . .	3,334,667	56,037,995
1905.. . . . .	3,881,199	84,175,226
1906.. . . . .	5,049,250	102,789,864
1907.. . . . .	5,045,177	72,016,402
1908.. . . . .	6,813,020	105,613,454

During the present year, a proportionately large acreage has been broken and conservative estimates place the yield at 115,000,000 bushels.

For the storage and handling of the western crop there were, during the season of 1908, 1,341 interior elevators, 36 warehouses and 13 terminal elevators having a total capacity of 58,535,700 bushels. On the Canadian Pacific Railway there were 919 elevators, 25 warehouses having a total capacity of 28,752,000 bushels; on the Canadian Northern Railway, 358 elevators, 11 warehouses with a capacity of 10,231,000 bushels; on the Midland Railway and the Brandon, Saskatchewan and Hudson Bay Railway, 18 elevators with a capacity of 520,000 bushels; on the Alberta Railway and Irrigation Company, 10 elevators with a capacity of 274,000 bushels; Ontario Terminal elevators, Canadian Pacific Railway, 11 elevators with a capacity of 11,758,700 bushels, and the Canadian Northern Railway, 2 elevators with a capacity of 7,000,000. During the past season, additional elevators have been constructed along the line of the new Grand Trunk Pacific Railway, which is now in operation to within 115 miles of Edmonton, as well as along the older railroads. The shipments of grain by vessels from Fort William and Port Arthur increased from 28,444,645 bushels in 1905 to 47,743,336 bushels in 1908, and the all-rail shipments show a still more remarkable increase, viz.: from 2,528,693 bushels in 1905, to 14,364,177 bushels in 1908.

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These ports being naturally the spout through which the immense crop of the west finds its outlet, have claimed a special measure of attention from the department and will necessarily continue to do so for several years to come. The extensive dredging operations being carried on under contract with the Great Lakes Dredging Company have progressed most satisfactorily, a total of 2,883,607 cubic yards of material having been removed from April 23rd to December 4th, when the plant was laid up in winter quarters. On the 27th April last a further contract was entered into with the above-mentioned firm for the excavation of a basin at the mouth of the Mission river, which will form the lake terminus of the Grand Trunk Pacific Railway. Around this basin a quay wall will be in due course constructed, with the necessary slips for the accommodation of vessels receiving and discharging cargoes.

Early this season, on representations from the Board of Trade of Winnipeg, the local boards of trade and business and railway interests, the question of the further deepening of the channel in the Kaministiquia and Mission rivers to 25 feet was carefully studied, with the result that the work of increasing the depth and width of the channel and basins, beyond what it was originally determined upon, has been undertaken, it having been found that the larger grain vessels now engaged in the carrying trade were seriously handicapped in moving from elevator to elevator when partially loaded, twenty-two feet of water not being sufficient to afford them adequate steerage way.

From Fort William and Port Arthur, the bulk of the grain for the crop year goes by vessel to the Georgian Bay ports, Kingston and Montreal. The harbours on the Georgian Bay have now a combined elevator capacity of 7,499,000 bushels, four million of which is at Midland and Tiffin. At Victoria harbour, the Canadian Pacific Railway has now under construction a large terminal elevator which it is expected will be ready and thoroughly equipped for the handling of grain by the summer of 1910. The two great lines of railway, the Grand Trunk and Canadian Pacific, have decided upon the development of the two terminals, Tiffin and Victoria harbour, respectively, for the accommodation of this traffic, and the department is carrying on extensive dredging operations at both these ports, under contract with the Canadian Construction Company, which are progressing rapidly and satisfactorily. At Tiffin, a slip has been dredged sufficient to permit the largest lake vessel in the grain-carrying trade to discharge her cargo at the new two-million bushel Grand Trunk Railway elevator. Up to September 1st, 1909, 4,000,000 bushels of grain had been received at the two elevators, the Aberdeen and the Grand Trunk, and 2,000,000 bushels at Midland.

At Victoria harbour, three dredges have been at work, with an average daily output of 5,000 yards. A slip of 600 feet wide, 25 feet deep and practically 5,000 feet long should be completed, according to the original plan, early next season, which will be in advance of the completion of the elevator and freight sheds of the Canadian Pacific Railway. Both the above mentioned harbours are being developed in accordance with a comprehensive plan and to a corresponding depth, namely: 25 feet, to those at the head of navigation on Lake Superior. These ideal conditions for water shipment, taken in conjunction with the double lines of railway with a four-tenths of one per

cent grade, recently constructed between these harbours and the main lines of the Grand Trunk Pacific and Canadian Pacific railways, afford an exceptionally favourable route.

Along with the Georgian Bay ports, to which reference has been made, a marked increase in traffic is also rapidly developing at Goderich, which has now two elevators with a combined capacity of 700,000 bushels and a considerable quantity of grain is now being handled for local consumption by mills in the western part of the province. Located on the harbour front, is one of the largest flour mills in Canada, capacity being 1,200 barrels a day. Dredging has been performed with a view to improving the entrance to this harbour and strong representations have been received urging further work in the inner harbour to provide the necessary berthing facilities for vessels.

Kingston and Prescott have an elevator capacity of 1,506,000 bushels and 1,000,000, respectively, while the capacity at Montreal is 4,081,000 bushels. The capable commission in charge of the latter port are manifesting great energy and unflagging interest in its development into a world port. It is the only North American port affording access to ocean vessels of 16,000 tons from which transshipment can be made into inland coasting vessels carrying 2,000 tons of cargo. Situated 1,000 miles from the sea, deep-water navigation stretches inland a distance of 1,500 miles further. The tonnage of the port has doubled within the last five years and in general volume of business it is now excelled only by the port of New York. The upper and central portions of the harbour are now fully occupied, but there are unlimited possibilities in what is called the eastern section, extending below St. Mary's Current, down to Longue Pointe and, if necessary, as far as Pointe aux Trembles. A beginning in this development was made in the summer of 1900, when a contract was entered into with Messrs. Poupore & Malone for the construction of a high level pier in the lower division of Montreal harbour. The pier was completed in the year 1907, and is 1,000 feet long on the upper or western face, 850 feet on the opposite face, with a width at coping level of 270 feet. Its top stands 23 feet above extreme low water level and the depth along its face is 30 feet at the same stage of water. As stated above, this was only the beginning of a much more comprehensive scheme of port development on broad national lines which is now engaging the earnest consideration of the commission. During 1908, the Chairman of the commission and its Chief Engineer made an inspection of the principal British and continental ports, the result of which forced the conclusion that Montreal was ideally situated from the point of view of European transportation, the only drawback being the winter season. The preparation of extensive plans to increase the facilities of the port and provide for the increased business were immediately undertaken. For the study of the proposed scheme of extension, engineers of the Department of Marine and Fisheries and Public Works were called in and have rendered valuable assistance. Montreal is fortunate in the fact that the entire foreshore is public property, so that whatever scheme of enlargement is finally decided upon to render more efficient the economical transfer of goods between the various systems of inland transportation and ocean vessels is certain of accomplishment with the minimum of expenditure.



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During the year, the work under contract with the Etienne Dussault Company, Limited, at Quebec has been pushed with vigour. It consists of the construction of an extension, in a northerly direction, to the breakwater built many years ago on the river front of the harbour of Quebec. The length of the extension is 1,400 feet along the St. Lawrence and a return face of 200 feet at the northern end, the back of the crib work and concrete being filled with dredged material for a depth of 150 feet. The work is used for the landing of passengers and freight by the 'Empress' steamers of the Canadian Pacific Steamship Company. A temporary freight shed 450 feet long by 80 feet wide was constructed in the year 1906 to give traffic accommodation pending the construction of permanent sheds, and during the present season a second temporary shed is being erected.

On the opposite side of the river at Lévis, the department has purchased what is known as the Carrier-Lané property with a view to the construction of a deepwater wharf which will provide additional accommodation for the increasing St. Lawrence trade. Plans for this work are now in course of preparation and the department will, in all probability, be in a position to issue a call for tenders during the coming winter.

St. John, N.B., occupies a unique place among Canadian ports, in that until the last few years it has been self-developed. This harbour was conferred upon the corporation by the Crown by charter dated 18th May, 1785, since when all harbour works have been carried out directly by or under arrangement with the city, the latter levying dues for the upkeep of the port. Of late years the government, at the request of the city, has come to its assistance and has performed extensive dredging to provide foundations for wharfs under construction by the city, as well as the deepening of the slips to 32 feet at low water for the accommodation of the large 'Empress' steamers and Allan Liners which make St. John their winter terminus. In addition to the dredging, the department has now undertaken construction work, a contract having been entered into on the 24th November, 1908, with D. C. Clark for the construction of an extension to the wharf at Sand Point. Under your administration as minister, an extensive scheme of improvement has also been inaugurated on the west side which contemplates the construction of a number of additional winter port berths to the southward of Sand Point. The dredging required in connection with the proposed berths is at present progressing very satisfactorily under a contract dated September 16 last with the Maritime Dredging Company, which has now three dredges engaged on the work, the largest of which, the *Cynthia*, is equipped with a 12-yard bucket. The large departmental elevator dredge *Fielding* has also been put to work in the main channel with very beneficial results.

Generous sums of money have also been expended in the different provinces, during the year under review, for the purpose of providing more adequate wharf accommodation and in the improvement of harbours by dredging for the benefit of the local shipping and coasting trade. A great deal has also been accomplished in providing boat harbours and protection works for the fishermen of the maritime provinces. Owing to the existence of the limnoria and the teredo in the waters of the Atlantic and the Gulf of St. Lawrence, the use of creosoted timber is yearly becoming more extensive in these works, and will increase their lifetime by many years. In this con-

nection, it may not be out of place to mention that there would seem to be a field for the production in Canada of creosoted timber, which might be very profitably taken up by private enterprise, for as it is at present all this timber has to be specially treated at works established in the States of North Carolina and Virginia and imported into Canada.

#### GEORGIAN BAY CANAL.

The final report of the corps of engineers who conducted this survey has now been published, and I think is conceded to be the finest report of an engineering character yet issued by any department of the Canadian government. The result of arduous labour, in both field and office, it evidences from every standpoint the highest engineering ability and the most exhaustive study of modern methods of canal construction as applied to the projected work. The construction of a 440 mile inland waterway from the Georgian Bay to the port of Montreal is demonstrated to be an entirely feasible scheme, and a most carefully prepared estimate has been made of the cost of the different sections of the proposed canal. Investigations are still being carried on and will be continued along the tributaries of the Ottawa river in connection with the question of water storage for canal purposes.

#### UPPER OTTAWA RIVER STORAGE.

A commencement has this year been made by the department in the very important undertaking the storing, during the period of spring freshets, the waters of the upper Ottawa river. The Ottawa drainage basin consists of an area of 55,000 square miles, 15,000 of which lie in the province of Ontario, draining into the Petawawa, Madawaska, Mississippi, Rideau and Nation rivers, and 40,000 in the province of Quebec, draining into the great Victoria basin, Timiscamingue, Kippewa, Dumoine, Black, Coulonge, Gatineau, Lièvre and Rouge rivers. The three latter sub-basins in Quebec drain 20,000 square miles, leaving only 20,000 square miles of well-watered pine country, nearly all of which drains into Lake Timiscamingue, 100 square miles in area. In the Timiscamingue district, conditions are very favourable to the storage of the run-off or surplus water because of the great granite ponds with their narrow gorge-like outlets. The storage of the upper Ottawa means the control by sluices of the various lakes so that the overflow waters of the spring will be retained and stored until autumn, when they can be used to augment the very meagre flow from the month of October to the month of March. Records show that all the water flowing down the Ottawa for sixty years past has averaged 55,000 cubic feet per second of that time, and at times it has run off at as high a rate as 250,000 cubic feet per second, only, however, to dwindle down as low as 10,000 to 15,000 cubic feet per second.

In the upper Ottawa lakes, an artificial reservoir has been provided by nature; Lake Kippewa, 100 square miles in area, Quinze and Expanse lakes, 100 square miles and Timiscamingue, 100 square miles, and these can be gradually supplemented by numerous other lakes of smaller area. The three basins mentioned are capable of storing approximately, a layer of 15 feet deep over an area of 300 square miles, or 4,500 square miles one foot deep. This will furnish a flow of nearly 10,000 cubic feet per second during the low water period when the flow at Ottawa is only 10,000 to 12,000

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cubic feet per second, or in other words, the 150 days' short flow of water would be doubled. What this will mean to the navigation, lumber and power interests along the Ottawa river does not require to be enlarged upon.

## CONSERVATION OF NATURAL RESOURCES.

Another movement which may fittingly be referred to in this connection is that of the conservation and better utilization of the natural resources of the Dominion. Legislation was passed at the last session of parliament empowering the appointment of a National Commission to undertake the study of this question, and the personnel of the commission has recently been decided upon under the chairmanship and active direction of Honourable Clifford Sifton. The members have been selected with a view to securing the very best body of men available and fitted to deal in a broadminded and comprehensive manner with questions fraught with so much importance to the whole future industrial and commercial prosperity of the country. At the commencement of the movement, the Department of Public Works immediately took steps to assist, within its purview, in the getting of necessary detailed information. Early this year, the district engineers of the department were requested to compile a statement, each for his own district, containing the names of navigable rivers and lakes therein, length of the stretches navigated, with approximate depth and width, and, in cases where conservation of water by reserve dams has been considered for navigation purposes, particulars as to the flooding of lakes or water-powers, giving as detailed information as possible regarding the latter, such as location, state of development, amount of discharge at low and high stages and, if already disposed of, name of owner or lessee and conditions of sale or lease. The gathering of this data will, necessarily, require considerable time and extensive preliminary examinations, but a substantial beginning has already been made.

## DREDGING.

The expenditure of the department under the head of dredging, including new plant, repair and maintenance of existing plant, amounts to \$4,547,773.43, a sum of \$1,203,466.87 in excess of the outlay during the preceding year in this field of departmental operations. The work has been carried on both by privately owned and departmental dredges in all parts of the Dominion. During the present year a change has been inaugurated with respect to the method of operation of the departmental dredging plant, which has now been placed under the direction of the various district engineers so far as the location and extent of the work to be performed is concerned, while the superintendents of dredges are charged with the maintenance, repair and operation of the plant and its removal from place to place as directed by the district engineer. I am pleased to say that the adoption of this policy has been followed by the most satisfactory results.

Outside of the various national harbours where dredging has been performed and to which reference has already been made, works of improvement have been carried on at the following places:—

*Maritime Provinces.*

*Nova Scotia.*—Battery Shoal, Lewis wharf and shoal outside, Cape Breton county, La Have river, Liverpool, Marine Slip (Yarmouth), Pictou bar, Port Mulgrave, Sherbrooke and Yarmouth.

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*New Brunswick.*—Blacks Harbour, Clifton, Flewellings wharf, Hampton, Harbour channel St. John, Dalhousie, Long Island Kennebecasis river, L'Etêté, Moss Glen, Reids Point wharf, Oak Bay, Rothesay, Sealys shoal, St. Andrews basin (eastern entrance), St. George, Traverse, Whitehead and winter port berths, St. John.

*Prince Edward Island.*—Annandale, Murray river, Murray Harbour south, McPhersons Cove, Grand river, Pownal, Souris and Victoria (Crapaud).

### *Quebec.*

Bécancour, Berthier, Chicoutimi, Chateauguay, Dorion, Fassett, Gatineau Point, Godefroy River, Green Shoals, Ile aux Foins, Ile aux Noix, Ile Perrot, Lake St. John, L'Assomption, Lièvre River, Louisville, Montebello, Nicolet, Papineauville, Point Lévis, Port St. François, Quebec, Rigaud, Rimonski, River Batiscan, River du Loup, River Jésus, River Maskinongé, River Ouelle, River St. Francis, St. Jean des Chailons, St. Johns, St. Maurice River, St. Pierre les Becquets, St. Placide, Saguenay River, Sorel, Three Rivers, Vaudreuil, Verdun, Ville Marie, Yamachiche and Yamaska.

### *Ontario.*

Blanche Shoals, Blind River, Bowmanville, Burlington Channel, Cobourg, Collingwood, Trenton, Garden Island, Goderich, Hamilton, Hawkesbury, Kincardine, Kingston, Lake Nipissing, Lion's Head, Little Current, L'Original, Meaford, Newcastle, New Liskeard, Owen Sound, Pelee Island, Penetanguishene, Picton, Point Edward, Port Arthur, Fort William, Mission and Kaministiquia Rivers, Port Bruce, Port Burwell, Port Elgin, Port Hope, Port Stanley, Rondeau, Ruscombe River, Sarnia, Sault Ste. Marie, Spanish River, Summerstown, Thames River, Thornbury, Tiffin, Toronto, Victoria Harbour, Waubushene, Wiarton, Wingfield Basin and Wolfe Island.

### *Manitoba.*

Icelandic River, Lake Francis, Red River, St. Andrews Lock, Swan Lake and Lake Winnipegosis

### *British Columbia.*

Union Bay, Fraser River (at Matsqui), Harrison River, Vancouver, Victoria, Annieville Bar, Nanaimo, Okanagan River, Thompson River and Woods and Long lakes.

During the year, the department's plant has been augmented by the addition of two powerful dredges, the *Quebec* and *Industry*, and a large suction dredge of new type, called the *Fruhling*, has been purchased for use in British Columbia waters where in the mountain rivers of that province, with their continually shifting channels owing to the vast deposits of sand, mud and silt brought down during periods of freshet, its operation should prove particularly efficacious. The *Fruhling* is a hydraulic hopper and suction dredge with steel hull having a length of 187 feet, breadth

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34.6 feet, with a draught when loaded of 13.1 feet, and capable of dredging to a depth of 45 feet at the rate of 1,500 cubic yards per hour, when discharge pipe is employed. The capacity of the hoppers is 785 cubic yards. The feature of the *Fruhling* dredge is the closing of the mouth of the suction pipe by a large bucket, or plough, which bites into the surface of the material dredged. This system is specially developed to deal with such light materials as those above mentioned. This dredge is at present engaged in the improvement of the Fraser river channel with the object of providing deep water navigation from the city of New Westminster to the sea.

## PUBLIC BUILDINGS.

This branch of the service has expended the sum of \$5,845,286.70 as compared with \$4,331,901.40 in the preceding year. During the year the following buildings were completed:—

*Nova Scotia*.—Truro, armoury.

*Quebec*.—Cookshirc, post office; Lachute, post office; Magog, post office, St. Johns, post office; St. Johns, cavalry stables.

*Ontario*.—Belleville, drill hall; Hamilton, drill hall; Kincairdine, post office; Ottawa, Parliament Building addition; Peterborough, drill hall; Simcoe, post office; Strathroy, armoury; Toronto, drill hall; Walkerton, armoury.

*Manitoba*.—Brandon, armoury; Neepawa, post office; Selkirk, post office; Winnipeg, examining warehouse and post station 'B'; Fort Osborne, guard room and quarters.

*Saskatchewan*.—Maple Creek, post office; Regina, public building; Saskatoon, public building.

*Alberta*.—Edmonton, public building; Medicine Hat, public building.

*British Columbia*.—Cumberland, post office; Ladysmith, public building; Vancouver, public building.

And others were either placed under contract or are presently in course of construction as follows:—

*Prince Edward Island*.—Georgetown, public building.

*Quebec*.—Joliette, armoury; Montreal, postal station 'D'; Montreal, general post office; Plessisville, post office; Quebec, School of Gunnery; Quebec (St. Roch), post office; Sherbrooke, drill hall.

*Ontario*.—Durham, armoury; Glencoe, post office; Kingston, quarters for subordinate staff; Kingston, barracks for stables; Leamington, post office; Ottawa, Royal Victoria Museum; Parkhill, post office; Toronto, Observatory; Welland, post office; Whitby, post office.

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*Manitoba*.—Dauphin, post office; Emmerson, post office.

*Saskatchewan*.—Estevan, post office; Yorkton, post office.

*British Columbia*.—Victoria, Immigration Hospital; Victoria, public building addition.

The report of the Chief Architect shows in detail the nature and value of the work performed. Among the buildings deserving of particular mention which have been completed or are fast nearing completion are the Royal Victoria Museum and the new wing of the Parliament Buildings at Ottawa; additions to the drill halls at Toronto and Hamilton, Ont., and the new drill halls at Peterborough and Belleville, Ont., the Regina, Edmonton and Vancouver public buildings, all of which are exceptionally creditable structures, both from the point of view of architectural design and of efficient workmanship.

During the past ten years, the increase in number of government employees, consequent upon the establishment of new services and the enlargement and extension of existing ones, rendered necessary as the country developed, has resulted in many of the departments being forced to sub-divide their staffs and seek accommodation outside of the departmental buildings, in rented buildings throughout the city. Steps were accordingly taken some four years ago looking to the construction of a new departmental building at Ottawa, which it was finally decided to place on the eastern side of Major's Hill Park. The Crown has now acquired all the properties between Sussex street and Mackenzie avenue from the Lindsay Departmental Store to the Royal Mint. The Chief Architect has almost completed plans and specifications for a new departmental block 576 feet in length by 190 feet in depth, six stories in height and containing approximately 588,000 square feet of floor area. The building will be located a short distance south of St. Patrick street and will face the park, extending into it beyond the line of Mackenzie avenue. The new structure will afford accommodation for all the services now occupying rented buildings in the city and will enable the scattered branches of some of the larger departments to be reunited, thereby obviating much loss of time and inconvenience to those having public business to transact, and making possible the more immediate supervision of the different services by the departmental head.

### MISCELLANEOUS.

Other reports contained in this volume, which are well worth careful perusal, are that of the Accountant, giving in detail the expenditure in connection with the various services carried on by the department; the report of the Superintendent of Telegraphs; of the Law Clerk, comprising a list of contracts entered into and a statement of the properties purchased, sold or leased by or to the department; of the Collector of Revenue, showing the state of the revenue during the past fiscal year, and also less important appendices which will convey some idea of the large amount of work performed by the department.

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Before concluding, I wish to express my sincere appreciation of the hearty co-operation of all the officials of the department in the work of the year.

I have the honour to be, sir,

Your obedient servant,

J. B. HUNTER,  
*Deputy Minister.*





PART II

REPORT OF THE CHIEF ACCOUNTANT

FOR THE

FISCAL YEAR ENDED MARCH 31

1909



DEPARTMENT OF PUBLIC WORKS, CANADA,  
ACCOUNTANT'S OFFICE,  
OTTAWA, August 20, 1909.

NAPOLÉON TESSIER, Esq.,  
Secretary,  
Department of Public Works,  
Ottawa.

SIR.—I beg to submit the report upon the expenditures made by this department during the fiscal year ended, March 31, 1909.

As in previous years, the report takes the form of three tabular statements, as follows:—

*Statement A*, showing the expenditures upon each work under the several heads of (1) construction and improvements, (2) repairs, (3) staff and maintenance. In treating of public buildings, as it would be cumbersome to give the cost of maintenance in detail in this statement, that expenditure is condensed into one item for each province, the fuller detail being reserved for *Statement B*.

*Statement B*, showing separately for each building, the cost of rent, salaries, heating, lighting and water.

*Statement C*, showing amounts advanced by government for the construction of certain works of a semi-public character, under statutory authority and after inspection by officers of this department.

The total expenditure during the fiscal year was \$14,784,739.39, an increase of \$3,585,354.45 over the expenditures in 1907-8.

The volume of work passed through the Accountants Branch during 1908-9 may be briefly indicated as follows:—

	Number of cheques issued.	Amount.
		\$ cts.
Direct payment by Departmental cheque—		
Issued by head office, Ottawa.....	63,130	4,857 566 35
" agencies.....	10,631	833 289 53
Total departmental cheques.....	73,761	5,690,855 88
Payment by Receiver General's cheque, after applications issued by this office. upon the Auditor General (contract work, &c).....	1,518	9,093,883 51
Total expenditure.....		14,784,739 39

I have the honour to be, sir,

Your obedient servant,

A. G. KINGSTON,  
Chief Accountant and Controller.



# STATEMENT OF EXPENDITURE

DURING

FISCAL YEAR ENDED MARCH 31, 1909



STATEMENT A.—Showing the Amounts Expended by the Department of Public Works of Canada during the Fiscal Year ending March 31, 1909.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>PUBLIC BUILDINGS.</b>				
<i>Nova Scotia.</i>				
Amherst post office, &c.....	2 346 04	28 10		2 374 14
Annapolis post office, &c.....		649 47		649 47
Antigonish post office, &c.....	5 018 73	7 95		5,026 68
Aricat post office, &c.....		4 50		4 50
Baddeck post office, &c.....		17 10		17 10
Brigewater post office, &c.....	27,856 71			27,856 71
Canning armoury.....	3,000 00			3,000 00
Canso post office, &c.....	1,737 74	144 97		1,882 71
Dartmouth post office, &c.....	104 89	88 95		195 84
Digby post office, &c.....	12 10	45 77		57 87
Glace Bay post office, &c.....	27,302 00			27,302 00
Guysboro' post office, &c.....	412 17	68 13		480 30
Halifax appraiser's office.....	6 50	19 05		25 55
" custom house (new).....	12,000 43	41 24		12,041 67
" immigrant building.....		1,756 49		1,756 49
" detention building.....	4,741 55			4,741 55
" Lawlor's Island quarantine station (winter hospital).....	15,841 67			15,841 67
" post office (formerly Dominion building).....	19,911 50	241 05		20,152 55
Inverness post office, &c.....	4,451 71	19 22		4,470 93
Kentville post office, &c.....	5 00	131 69		135 69
Liverpool post office, &c.....	2 95	245 40		248 35
Lunenburg post office, &c.....	2,554 91	60 03		2,614 94
Nappan experimental farm.....		5 88		5 88
New Glasgow post office, &c.....	1,707 02	7 13		1,714 15
North Sydney post office, &c.....		906 16		906 16
Parrsboro' post office, &c.....	3,028 25			3,028 25
Pictou custom house.....		84 89		84 89
" post office, &c.....	8 25	329 66		337 91
Point Edward quarantine station.....		542 51		542 51
Shelburne post office, &c.....	16,936 80			16,936 80
Springhill post office, &c.....		393 29	160 00	553 29
Sydney post office, &c.....	104 39	250 25		354 64
" Mines post office, &c.....		71 89		71 89
Truro armoury.....	2,683 21			2,683 21
" post office, &c.....	2 75	328 83		331 58
Westville post office, &c.....	15,250 84			15,250 84
Windsor post office, &c.....		451 20		451 20
Wolfville post office, &c.....	4,077 24			4,077 24
Yarmouth post office, &c.....	2,947 78	72 91		2,920 69
Heating, lighting, water, &c., for all buildings in Nova Scotia (for details see page 32).....			44,499 61	44,499 61
Totals, Nova Scotia.....	173,985 13	7,053 71	44,659 61	225,698 45
<i>Prince Edward Island.</i>				
Charlottetown Dominion building.....	1,894 35	1,492 68		3,387 03
" quarantine station.....		87 00		87 00
Georgetown post office, &c.....	4,750 72			4,750 72
Montague ".....	151 55	823 28		974 83
Souris ".....	401 50	181 08		582 58
Summerside ".....		1,555 93		1,555 93
Heating, lighting, water, &c., for all buildings in Prince Edward Island (for details see page 32).....			7,614 28	7,614 28
Totals, Prince Edward Island.....	7,198 15	4,139 97	7,614 28	18,952 40
<i>New Brunswick.</i>				
Bathurst post office, &c.....		43 04		43 04
Buctouche ".....				30 00
Campbellton ".....	30 00	396 43		396 43
Chatham ".....	99 05	153 24		252 31
Chatham quarantine station.....		925 51		925 51

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>PUBLIC BUILDINGS—Continued.</b>				
<i>New Brunswick—Continued.</i>				
Dalhousie post office, &c.,		94 19		94 19
Fairville " "	2,000 00			2,000 00
Fredericton " "		3,458 05		3,458 05
Grand Falls " "	944 55			944 55
Hillsboro' " "	26 55			26 55
Moncton " "	1 0 55	36 86		197 41
Newcastle " "		48 60		48 60
Richibucto " "		1,042 22		1,042 22
St. John custom house,	150 20	3,082 33		3,241 53
drill hall,	92 00			92 00
immigrant building,	2,163 68	471 62		2,635 30
military stores building,	25,748 32			25,748 32
Partridge Island quarantine station,	8,910 46			8,910 46
post office,	1,656 45			2,592 85
savings bank,		11 90		11 90
West post office,	1 50	90 32		100 82
St. Stephen's post office, &c.,		45 15		45 15
Sussex " "		93 40		93 40
Tracadie lazaretto,	7,639 54	86 75		7,726 29
Woodstock armoury,	27 00			27 00
post office, &c.,	36 75	33 75		70 50
Heating, lighting, water, &c., for all buildings in New Brunswick, (for details see page 33),			39,490 73	39,490 73
<b>Totals, New Brunswick,</b>	<b>49,695 60</b>	<b>11,058 87</b>	<b>39,490 73</b>	<b>100,245 20</b>
<i>Quebec.</i>				
Acton Vale post office, &c.,	6 89	165 55		172 44
Arthabascaville " "	2,500 00			2,500 00
Aylmer " "	72 46	57 00		129 46
Berthierville " "		419 33		419 33
Buckingham " "	13 15	93 42		106 57
Chicoutimi " "	7,157 43			7,157 43
Cookshire " "	8,914 47			8,914 47
Coutacook " "		347 45		347 45
Drummondville " "	1,003 21	29 85		1,033 06
Dundee custom house,		3,512 02		3,512 02
Grosse Isle quarantine station improvements,		11,635 36		11,635 36
disinfecting apparatus, including building	5,058 72			5,058 72
Farnham post office, &c.,	4 35	19 23		23 58
Fraserville " "	138 25	1,547 18		1,685 43
Granby " "	6 80	1,030 12		1,036 92
Hochelaga " "	86 00	139 94		1,007 94
Hull " "	4 75	37 60		42 35
Iberville " "	805 70	64 5 78		1,471 48
Joliette armoury,	1,105 24			1,105 24
post office, &c.,		116 30		116 30
Knowlton, " "	18,396 08			18,396 08
Lachine " "	3 05	120 27		123 32
Lachute " "	17,696 78			17,696 78
Lake Megantic post office, &c.,	4,085 70			4,085 70
Laprairie " "		389 35		389 35
L'Assomption " "		34 34		34 34
Lévis " "	525 11	16 25		541 36
Longueuil " "	466 20	13 65		479 85
Magog " "	22,991 92			22,991 92
Marieville " "	1,631 66			1,631 66
Montmagny " "	210 00	183 50		393 50
Montreal custom house,	6,669 30	1,882 95		8,552 25
eastern postal station,	25,000 00			25,000 00
engineer's office,		75 63		75 63
examining warehouse,	248 00	38,967 92		39,215 92
power for elevators,			2,768 22	2,768 22
immigration office,		889 24		889 24
inland revenue office	134 25	663 66		797 91
new examining warehouse,	412,518 32	70 65		412,588 97
pneumatic tube system, between general post office and new postal stations,		277 51	235 94	513 45
post office (main),	383,312 74	6,700 02		390,012 76
power for elevators,			3,112 05	3,112 05
postal station "A", 430 Wellington street,		122 65		122 65
postal station "B" (new),	19,924 51	341 94		20,266 45
postal station "C", 266a Amhurst street,	46 57	765 56		812 13
Nicolet post office, &c.,	4,929 18			4,929 18



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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>PUBLIC BUILDINGS—Continued.</b>				
<i>Quebec—Continued.</i>				
Nominique immigration building.....		217 04		217 04
Peribonea .....		87 60		87 60
Pierreville post office, &c. ....	5,225 00			5,225 00
Plessisville .....	3,833 83			3,833 83
Pointe St. Charles new postal station.....	15,724 35			15,724 35
Quebec citadel, Governor General's quarters.....		37,943 10		37,943 10
" custom house.....	90 29	1,249 01		1,339 30
" Dominion arsenal, main store building .....	25,843 24			25,843 24
" drill shed, school of gunnery.....	402 41			402 41
" drill hall, addition to building and levelling grounds.....	4,755 38			4,755 38
" examining warehouse.....		402 28		402 28
" marine and fisheries agency.....		310 06		310 06
" immigrant buildings.....	11,656 07	2,180 95		13,837 02
" hospital for trachoma.....	7,373 03			7,373 03
" observatory.....		62 18		62 18
" post office.....	11,814 47	3,377 74		15,192 21
" power for stamp machine.....			250 00	250 00
" St. Roch's post office.....	23,762 48	70 41		23,832 89
Richmond post office, &c. ....	3,732 89	70 84		3,803 73
Rigaud armoury.....	1,524 20			1,524 20
Rimouski, post office, &c. ....	1,229 25	121 81		1,351 06
Roberval immigrant shed.....		398 32		398 32
" post office, &c. ....	4,000 00			4,000 00
Sherbrooke drill hall .....	61,758 69			61,758 69
" post office, &c. ....	66 61	2,349 18		2,415 79
Sorel .....	694 26	380 02		1,074 28
St. Eustache .....	1,057 12	152 68		1,209 80
St. Gabriel de Brandon post office, &c. ....		5 00		5 00
St. Henri post office, &c. ....	933 64	33 83		967 47
St. Hyacinthe drill hall.....	971 50			971 50
" inland revenue.....		510 42		510 42
" post office.....		2,155 16		2,155 16
St. Jacques de l'Achigan post office, &c. ....	3,000 00			3,000 00
St. Jerome post office, &c. ....		552 07		552 07
St. Johns .....	19,840 54	173 32		20,013 86
" military buildings, stable for cavalry.....	22,985 92			22,985 92
St. Louis du Mile End post office.....	712 80	1,819 62		2,532 42
St. Therese post office, &c. ....	5,050 00			5,050 00
Terrebonne .....		402 95		402 95
Therford Mines post office, &c. ....		855 19		855 19
Three Rivers custom house.....	10 00	2,245 56		2,255 56
" drill hall and armoury.....	1,160 74			1,160 74
" post office.....	22,140 06	882 65		23,022 71
Valleyfield post office, &c. ....	211 00	36 53		247 53
Victoriaville .....	9 30	477 72		487 02
Heating, lighting, water, &c., for all buildings in Quebec (for details see page 34).....			155,859 81	155,859 81
<b>Totals, Quebec.....</b>	<b>1,208,018 87</b>	<b>130,874 96</b>	<b>162,226 02</b>	<b>1,501,119 85</b>
<i>Ontario</i>				
Alexandria post office, &c. ....	7 00	23 35		33 35
Almonte .....	217 72	118 84		336 56
Amherstburg .....		24 23		24 23
Arnprior .....		1,155 88		1,155 88
Bathie .....	10 60	270 60		281 20
Belleville armoury.....	85,806 17			85,806 17
" post office, &c. ....	50 50	352 43		402 93
Berlin .....	2,172 90	54 84		2,227 74
Bowmanville .....	2 60	30 14		32 74
Brampton .....	2 25	401 59		403 84
Brantford drill hall and armoury.....	2,661 97	250 00		2,911 97
" post office, &c. ....	184 14	319 04		503 18
Bridgeburg .....		4 05		4 05
Brockville .....	301 79	2,553 82		2,855 61
Carleton Place .....		18 00		18 00
Cayuga .....		294 65		294 65
Chatham armoury.....	3,111 55			3,111 55
" post office, &c. ....	1,936 57	111 53		2,048 10
Chesley .....	3,869 40			3,869 40
Clinton.....	0 25	345 82		346 07
Cobourg armoury.....	2,974 55			2,974 55
" post office, &c. ....	170 00	476 61		646 61

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Fur- niture.	Staff and Main- tenance.	Total.
PUBLIC BUILDINGS—Continued.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Ontario—Continued.</i>				
Collingwood post office, &c.		107 00		107 00
Cornwall "	1,802 47	70 23		1,872 70
Deseronto "	145 00	65 40		210 40
Dresden "	2,103 80			2,103 80
Dundas "	5,022 80	3 50		5,026 30
Durham armoury.	101 75			101 75
Elora post office, &c.	413 78			413 78
Essex "	1,012 90			1,012 90
Forcous "	721 08			721 08
Fort William post office, &c.	388 57	37 10		425 67
Galt "	14 00	217 85		231 85
Gananoque custom house.		443 00		443 00
" post office, &c.	386 01	45 50		431 51
Glencoe "	781 60			781 60
Goderich "	85 06	132 57		217 63
Guelph armoury.	65,340 61			65,340 61
" post office, &c.	153 15	407 74		560 89
Hamilton drill hall.	143,703 25			143,703 25
" post office.	12,666 50	394 51		13,061 01
" power for machinery.			45 00	45 00
Harrison post office, &c.	3,018 45			3,018 45
Hawkesbury "	11 00	81 29		92 29
Ingersoll "		13 08		13 08
Juniper Island "	60 00			60 00
Kemptville "	3,003 70			3,003 70
Kenora "		197 70		197 70
Kincaidine "	12,050 43			12,050 43
Kingston Custom house.		473 94		473 94
" examining warehouse.		108 90		108 90
" inland revenue office	5 00	810 05		815 05
" post office.	123 79	908 11		1,034 90
Kingston Military district—				
Artillery Park barracks.	3,685 11			3,685 11
New hospital for A. and B. batteries.	188 00			188 00
R. M. C. new servants quarters.	54,717 47			54,717 47
stables.	3,337 95			3,337 95
Tete du Pont barracks, alterations to A. C. and E. blocks.		8,564 78		8,564 78
Leamington post office, &c.	1,657 80			1,657 80
Lindsay "	35 00	128 29		163 29
Listowel "	3,898 35			3,898 35
London custom house.	344 95	809 29		1,154 24
" drill hall and armoury.		150 00		150 00
" military buildings, new store building.	602 60			602 60
" post office.	2,849 05	429 35		3,278 42
Markham "	8,537 31			8,537 31
Meaford armoury.	25 00			25 00
Mitchell post office, &c.	1,609 00			1,609 00
Mount Forest post office, &c.	3,662 54			3,662 54
Napanee "	75 25	85 60		160 85
Niagara Falls "	117 27	93 44		210 71
North Bay "	16,758 59	1 25		16,759 84
Orangeville "	110 00	33 73		143 73
Orillia "		25 78		25 78
Oshawa "	129 00	72 70		201 70
Ottawa, astronomical observatory.	21,489 47	37 65		21,527 12
" power for machinery.			177 08	177 08
" bacteriological laboratory.		216 12		216 12
Departmental buildings—				
Department of Mines, testing fuel.	2,093 00			2,093 00
Elevator in western block.	4,035 47			4,035 47
Equipment for elevator in eastern block.	3,633 50			3,633 50
Improvements in lavatories.	8,679 92			8,679 92
New departmental buildings.	39,115 89			39,115 89
Renewal of skylights.		64 20		64 20
Experimental farm.	13,159 64	2,450 22		15,619 86
Government printing bureau, electric motor, machinery, &c.	20,847 13			20,847 13
Major's Hill park.			8,020 74	8,020 74
National art gallery.	14,670 05		851 75	15,521 80
Parliament buildings, improvements.	189,977 71			189,977 71
Rideau Hall, improvements.			29,553 28	29,553 28
" grounds, \$9,441.17; snow, \$1,297.18; fuel and light, \$8,500; watchman, \$50.00.			19,898 35	19,898 35
Royal Mint.	61,353 09			61,353 09

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>PUBLIC BUILDINGS—Continued.</b>				
<i>Ontario—Continued.</i>				
Ottawa Supreme Court library.....	3,607 24			3,607 24
" Victoria memorial museum.....	376,867 00			376,867 00
" generally, steel fittings, &c.....	49,997 71			49,997 71
" Parliament grounds.....			13,981 84	13,981 84
" power for elevators.....			7,241 47	7,241 47
" removal of snow.....			2,670 69	2,670 69
" repairs and furniture.....		195,031 83		195,031 83
" telephone service.....			17,213 48	17,213 48
Owen Sound post office, &c.....	42,465 31			42,465 31
Paris.....	8 65	2 50		11 15
Perry Sound custom house.....	420 74	17 45		438 19
Park Hill post office, &c.....	1,253 16			1,253 16
Pembroke.....	32 35	74 70		401 05
Peterboro, armoury.....	83,338 57			83,338 57
" custom house.....			64 62	64 62
" post office.....	5 90	513 16		519 06
Petrolia post office, &c.....		31 79		31 79
Pictou.....	30 95	24 44		55 39
Port Arthur immigrant building.....		18 31		18 31
" post office, &c.....	10,858 75	47 17		10,905 92
Port Colborne.....	50 00	212 30		2,290 90
Port Hope.....		91 65		91 65
Prescott.....	1,599 11	1,028 93		2,598 04
Renfrew.....	19,974 16			19,974 16
Sandwich.....	715 50	17 45		732 95
Sarnia armoury.....	5,500 00			5,500 00
" post office, &c.....	19 34	206 25		225 60
Sault Ste. Marie post office, &c.....	1 50	231 00	19 50	252 00
Seaford.....	4,008 90			4,008 90
Simcoe.....	21,912 17			21,912 17
Smith's Falls.....		90 68		90 68
Stratford armoury.....	2,034 04			2,034 04
" post office, &c.....	21 50	1,318 31		1,339 81
Strathroy armoury.....	19,455 92			19,455 92
" post office, &c.....		81 92		81 92
Sturgeon Falls.....	2,021 09			2,021 09
St. Catharines drill hall and armoury.....	1,275 19			1,275 19
" post office, &c.....	13 50	498 84		512 34
St. Mary's.....	3,719 55	10 99		3,730 54
St. Thomas.....	1 08	87 20		88 28
Sudbury public building.....	12,028 30			12,028 30
Tilsonburg post office, &c.....	5,521 35			5,521 35
Toronto assistant receiver general's office.....		15 80		15 80
" clerk of works office.....		71 70		71 70
" custom house, additional accommodations.....		1,674 69		1,674 69
" power for elevator.....			144 70	144 70
" drill hall, additional accommodation.....	4,613 12			4,613 12
" engineer's office.....		49 77		49 77
" examining warehouse.....		3,589 42		3,589 42
" inland revenue office.....		47 06		47 06
" meteorological observatory.....	65,039 52			65,039 52
" military buildings—				
Barracks for permanent corps.....	30 53			30 53
Magazine.....	3,002 65			3,002 65
" post office.....	10,288 12	1 988 55		12,276 67
" power for elevator.....			420 36	420 36
" pneumatic tubes.....		706 89		706 89
" annex for custom parcels.....	25,400 00			25,400 00
postal station A.....	29 25	327 24		356 49
" power for machinery.....			182 05	182 05
" B.....	9 68	71 58		81 26
" C.....	378 94	218 91		597 85
" D.....		5 78		5 78
" E.....	219 31	453 86		673 17
" F.....	125 73	139 21		265 94
" G.....	125 25	313 46		438 71
Junction post office.....		587 88		587 88
Trenton post office, &c.....				
Exbrige.....	1 252 74			1,252 74
Walkerton armoury.....	7,394 10			7,394 10
" post office, &c.....	5,013 90	16 65		5,030 55
Waterloo.....	5,022 60			5,022 60
Welland.....	6,938 69			6,938 69
Whitby.....	3,490 58			3,490 58
Windsor.....	321 67	243 97		565 64
Wingham.....		45 71		45 71

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>PUBLIC BUILDINGS—Continued.</b>				
<i>Ontario—Concluded.</i>				
Woodstock armoury.....	2 39 87			2 39 87
" post office, &c.....	90 00	709 42		799 42
Heating, lighting, water, &c., for all buildings in Ontario (for details see page 35).....			469,399 39	469,399 39
Totals, Ontario.....	1,646,583 31	235,284 35	5,9,819 68	2,451,687 34
<i>Manitoba.</i>				
Bannerman cattle quarantine station.....	130 98			130 98
Brandon drill hall.....	39,597 45			39,597 45
" experimental farm.....	2,014 31	754 60		2,768 96
" immigrant shed.....		105 00		105 00
" post office, &c.....	179 10	1,262 55		1,381 66
Dauphin ".....	15,255 48			15,255 48
Elmwood ".....	5,544 87			5,544 87
Emerson ".....	523 13			523 13
Gretna cattle quarantine station.....	85 50			85 50
Neepawa post office, &c.....	20,509 14			20,509 14
Portage la Prairie armoury.....	4 25			4 25
" post office.....	1,153 40	132 98		1,286 38
St. Boniface post office, &c.....	13,758 71			13,758 71
Selkirk ".....	23,022 83			23,022 83
Souris ".....	5,011 00			5,011 00
Winnipeg custom house.....	0 75			393 64
" engineer's office.....		10 50		10 50
" examining warehouse.....	180,083 84	74 55		180,158 39
" immigrant building (new).....	10,608 18	31 75		10,639 93
" " power for machinery.....			49 52	49 52
" " (old).....	3,780 66	219 65		4,000 31
" " power for machinery.....			49 53	49 53
" land's office.....	3,129 75	163 20		3,292 95
Military District.....				
quarters for married N. C. officers.....	57,082 50			57,082 50
" post office (old).....	1,133 91	954 33		2,088 24
" " power for machinery.....			336 45	336 45
" " (new).....	53,590 16	317 44		53,907 60
" north of C. P. R. track.....	23,297 08	2 05		23,299 13
" Railway Commissioners office.....		192 30		192 30
Heating, lighting, water, &c., for all buildings in Mani- toba (for details see page 36).....			51,483 30	51,483 30
Totals, Manitoba.....	459,497 03	4,554 40	51,918 80	515,970 23
<i>Saskatchewan and Alberta.</i>				
Athabasca lands office.....		55 00		55 00
Banff museum.....	277 95			277 95
Battleford Dominion lands office.....	3,097 82			3,097 82
Calgary custom house.....	153 80	141 50		295 30
" Dominion lands office.....	625 00	1,082 85		1,687 85
" immigrant shed.....		253 67		253 67
" post office.....	25,474 67	609 12		26,083 79
" " power for machinery.....			317 15	317 15
Edmonton Dominion lands and registry office.....	1,578 12	171 56		1,749 68
" immigrant building.....	400 00	31 59		431 59
" post office.....	70,849 38	280 95		71,130 33
" " power for machinery.....			12 90	12 90
Estevan Dominion lands office.....	142 56			142 56
Frank custom house.....	415 25			415 25
Humboldt Dominion lands office.....		178 62		178 62
" post office, &c.....	3,021 87			3,021 87
Indian Head experimental farm.....	3,083 19	461 85		3,083 19
" forestry station.....	1,500 00			1,500 00
Lethbridge armoury.....				
" court house, custom house and Dominion lands office.....	2,296 69	51 50		2,348 19
" experimental farm.....		11 93		11 93
" immigrant shed.....		310 90		310 90
" post office, &c.....		37 36		37 36
Lloydminster armoury.....	1,500 00			1,500 00
" immigrant shed.....		208 50		208 50
Macleod custom house.....	43 50	25 10		68 60
Maple Creek post office, &c.....	22,424 47			22,424 47
Medicine Hat armoury.....	19,370 34			19,370 34
" court house, post office, &c.....	10,593 45	1 00		10,594 45

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>PUBLIC BUILDINGS—Continued.</b>				
<i>Saskatchewan and Alberta—Concluded.</i>				
Moosejaw armory.....	30 00			30 00
" court house and Dominion lands office .....	21,831 05	103 75		21,939 80
" post office, &c.....	1,194 48	430 96		1,595 44
North Battleford custom house.....	421 55			421 55
" immigrant building.....		221 80		221 80
Prince Albert Dominion lands and registry offices.....	7,608 35	3 67 74		7,975 10
" immigrant building.....		25 00		25 00
" penitentiary.....	28,779 13			28,779 13
" post office, &c.....	5 00	1,305 20		1,310 20
Red Deer court house and Dominion lands office .....	1,794 15	9 50		1,803 65
Regina clerk of works office.....		4 00		4 00
" Dominion lands office.....		62 71		62 71
" immigrant building.....		318 42		318 42
" post office and custom house.....	50,224 44	252 31		50,488 75
Saskatoon immigrant building.....		219 00		219 00
" post office.....	45,893 62	161 45		46,055 07
Stettler immigrant building.....		10 00		10 00
Strathcona drill hall and armoury.....	3,000 00			3,000 00
" immigrant building.....	2,000 00	127 90		2,127 90
" post office, &c.....	10,500 00			10,500 00
Swift Current immigrant building.....		324 50		324 50
Vegreville immigrant building.....		62 02		62 02
Vermilion immigrant building.....		252 88		252 88
Wetaskiwin post office, &c.....	5,049 75			5,049 75
Wilkie temporary immigrant hall.....	2,763 00			2,763 00
Yorkton Dominion lands office.....		8 30		8 30
" post office, &c.....	9,599 53			9,599 53
Heating, lighting, water, &c., for all buildings in Saskatchewan and Alberta (for details see page 37).....			54,136 65	54,136 65
Totals, Saskatchewan and Alberta.....	357,519 13	8,175 44	54,466 70	420,161 27
<i>British Columbia.</i>				
Agassiz experimental farm.....		15 00		15 00
Atlin post office, &c.....		48 00	103 59	151 59
Bridleville custom house.....				433 15
Chilliwack post office, &c.....	433 15			433 15
Cranbrook ".....	51 10			51 10
Cumberland ".....	9,138 50			9,138 50
D'Arcy island leper station.....	31,323 43			31,323 43
Duncan post office, &c.....	1,481 00			1,481 00
Fernie ".....	9 65			9 65
Fernie ".....	15,469 57			15,469 57
Grand Forks custom house.....	325 35			325 35
" post office, &c.....	3,000 00			3,000 00
Kamloops ".....	2 70	393 75		396 45
Ladysmith ".....	30,044 74			30,044 74
Myncester custom house.....	325 05			325 05
Nanaimo post office, &c.....	2,988 31	141 20		3,129 51
Nelson cattle quarantine station.....	535 00			535 00
" post office, &c.....	61 10	333 47		394 57
New Westminster fisheries and Indian office.....		21 90		21 90
" post office, &c.....	1,436 10	3,668 19		5,104 29
Prince Rupert ".....	946 21			946 21
Revelstoke post office and custom house.....	50 10	6 20		56 30
Rossland armoury.....	2 00	59 72		61 72
" cattle quarantine station.....	18 00			18 00
" post office, &c.....	49 15	339 95		389 10
Vancouver examining warehouse.....	75,410 60	605 37		76,015 97
" power for machinery.....			45 29	45 29
" immigrant shed.....	241 67	104 10		345 77
" post office (old).....	329 82	2,930 63		3,260 45
" power for machinery.....			67 55	67 55
" (new).....	149,955 25			149,955 25
Vernon post office, &c.....	2,807 57			2,807 57
Victoria cattle quarantine station.....	27 94			27 94
" immigration building, including site.....	41,482 70			41,482 70
" marine and Indian offices.....		517 18		517 18
" post office.....	18,434 22	2,316 62		20,750 84
" power for machinery.....			281 72	281 72
" (old).....	135 20	306 76		441 96
William's Head quarantine station.....	26,305 38	180 00		26,485 38
Heating, lighting, water, &c., for all buildings in British Columbia (for details see page 37).....			41,247 37	41,247 37
Totals, British Columbia.....	412,821 56	11,988 04	41,745 52	466,555 12

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>PUBLIC BUILDINGS—Continued.</b>					
<i>Yukon Territory.</i>					
Dawson Commissioner's office.....		24,135 77			24,135 77
Heating, lighting, water, &c', for all buildings in Yukon Territory (for details see page 37).....				82,497 37	82,497 37
Totals, Yukon Territory.....		24,135 77		82,497 37	106,633 14
<b>PUBLIC BUILDINGS GENERALLY.</b>					
Advertising tenders for coal, Dominion buildings.....				1,707 30	1,707 30
Printing, stationery, instruments, travelling, &c.....				15,929 48	15,929 48
Salaries of resident clerks of works.....				20,626 92	20,626 92
Totals, Public Buildings Generally.....				38,263 70	38,263 70
<b>HARBOURS AND RIVERS.</b>					
<i>Nova Scotia.</i>					
Abercrombie Point wharf.....		1,855 11			1,855 11
Amherst Point wharf.....			979 14		979 14
Amiro's Hill wharf.....		989 67			989 67
Anderson's Cove, breakwater.....			3,033 57		3,033 57
Annapolis, ice piers.....		12,895 53			12,895 53
Argyle Head wharf.....		800 00			800 00
Arsonig breakwater.....			2,559 89		2,559 89
Avonport wharf.....			522 88		522 88
Baddeck wharf, improvements.....		1,851 15			1,851 15
Baddeck River, shear dams at Big Bad-deck.....		599 95			599 95
Bailey's Brook, harbour improvements.....		4,143 88			4,143 88
Barabois training pier.....		1,098 61			1,098 61
Barrington Passage.....			199 68		199 68
Bass River wharf.....			177 52		177 52
Battery Point breakwater.....		466 00			466 00
Bay Creek wharf.....			39 59		39 59
Bayfield breakwater.....			1,188 96		1,188 96
Bay St. Lawrence boat harbour.....		22,230 75			22,230 75
Bear Trap Cove breakwater.....			599 69		599 69
Beaver River breakwater.....		2,000 02	471 53		2,471 55
Belliveau Cove harbour.....			1,999 21		1,999 21
Belfry Gut channel.....			300 65		300 65
Big Bras d'Or wharf.....			150 0		150 00
Big Harbour wharf.....			19 81		19 81
Blue Rock breakwater.....		164 33	248 78		413 11
Bluff Head breakwater.....		2,005 17			2,005 17
Breton Cove, extension of breakwater.....		5,890 50			5,890 50
Broad Cove marsh.....			20 73		20 73
Canada Creek breakwater.....		62 66			62 66
Cape Auger breakwater.....			99 87		99 87
Cape North, wharf at Sugar Loaf, Aspy Bay north.....		583 15			583 15
Cape St. Mary breakwater.....		9,502 50			9,502 50
Caribou Island causeway.....		5,118 99			5,118 99
Castle Bay wharf.....		362 27			362 27
Charleville.....			280 00		280 00
Cbegoggin Point wharf.....		998 76			998 76
Chester.....	113 80				113 80
Cheticamp.....			432 70		432 70
Cheverie breakwater.....		3,029 83			3,029 83
Chureb Point wharf.....			2,400 00		2,400 00
Clark's harbour.....		4,495 92			4,495 92
Cow Bay (Port Morien) breakwater.....		8,150 37			8,150 37
Cow Bay Run breakwater.....		2,350 24			2,350 24
Cribbin's Point wharf.....			1,635 48		1,635 48
Culloden breakwater.....			438 30		438 30
David's Cove breakwater wharf.....		2,497 90			2,497 90
Deep Brook pile wharf.....		1,193 73			1,193 73
Delaps Cove.....			2,137 33		2,137 33
Devil's Island breakwater.....		151 41			151 41
Digby Harbour improvements.....	5,255 84	44,521 15			49,776 99
Diligent River breakwater.....		367 77			367 77
Dublin shore breakwater pier.....		27 94			27 94
Duncan's Cove breakwater.....		24 91			24 91
East Dover.....			198 94		198 94

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—Con.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Nova Scotia—Con.</i>					
Eastern Passage, Halifax Harbour.....		4,979 61			4,979 61
East Green Harbour, wharf, &c.....		1,299 54			1,299 54
East Harrigan.....			800 00		800 00
East Jeddore wharf.....		946 26			946 26
East Port Hebert pier.....		1,247 06			1,247 06
East River Sheet Harbour.....			157 82		157 82
East River (Pictou Co.) survey.....	29 00				29 00
Eastonville (3 Sisters) breakwater on north side of bar.....	3,438 09				3,438 09
Englishtown.....		4,494 22			4,494 22
Fort Lawrence.....		4,941 56	199 83		5,141 39
Fourchu.....	5,047 50				5,047 50
Fox Island, beach protection.....		1,052 62			1,052 62
Freeport.....			443 92		443 92
Georgeville wharf.....		1,490 28			1,490 28
Glace Bay, assistance towards harbour improvements.....		3,835 98			3,835 98
Glace Bay, beach protection.....		9,415 72			9,415 72
Grand Etang.....		10,513 53			10,513 53
Grand Narrows.....			35 23		35 23
Grass Cove (Iona) Little Bras d'Or Lake.....		982 66			982 66
Gulf Shore breakwater.....		2,409 85			2,409 85
Habitant River, wharf at Canning.....		2,763 17			2,763 17
Halls' Harbour.....			10,000 00		10,000 00
Hantsport.....			7,502 66		7,502 66
Harbour Bouche wharf.....			498 30		498 30
Harbourville.....		1,132 15	385 92		1,518 07
Hampton breakwater.....		30 59			30 59
Inverness (Broad Cove mines).....		910 96			910 96
Isaac's Harbour.....			21 15		21 15
Jersey Cove or Eel Cove.....			5 16		5 16
Joggin's Mines breakwater.....			3,089 91		3,089 91
Johnston's Harbour.....			1,099 44		1,099 44
Jordan Bay.....			21 24		21 24
Judique boat landing.....		1,200 00			1,200 00
breakwater at McKay's Point.....			1,358 99		1,358 99
Kelly's Cove.....		4,299 99			4,299 99
Kennington Cove.....			500 32		500 32
Ketch Harbour.....		2,001 33			2,001 33
L'Ardoise breakwater.....			978 17		978 17
La Have channel.....	3,287 66				3,287 66
La Have Island.....	500 00				500 00
Larry's River.....			50 00		50 00
Laurencetown (east) Conrad's Cove.....		1,198 23			1,198 23
Litchfield breakwater.....			144 74		144 74
Little Barachois.....			495 00		495 00
Little Brook.....			100 04		100 04
Little Harbour wharf.....		2,932 02			2,932 02
" Narrows wharf.....		40 36			40 36
" River Harbour wharf.....		2,000 00			2,000 00
" River wharf.....		32 06			32 06
Liverpool.....	8,425 91				8,425 91
Livingston's Cove.....			444 99		444 99
Lockport.....	6,739 37				6,739 37
Louisburg.....	9,624 23				9,624 23
Lower Jordan Bay.....	2,381 94				2,381 94
Lower Selma wharf.....		6,185 60			6,185 60
Lower West Pubnico.....	499 97				499 97
Lunenburg.....	71,234 54				71,234 54
McKinnon Harbour.....	19,602 51				19,602 51
McNair's Cove.....			1,809 75		1,809 75
McPherson's Cove (Great Bras d'Or) wharf.....		201 38			201 38
Mabou.....	101,230 43		2,495 74		103,726 17
McHone Bay.....	87,353 57				87,353 57
Malignant Cove.....		2,765 63	1,221 68		3,987 31
Manthorn's Cove, removal of boulders.....			500 00		500 00
Marble Mountain, approach.....		401 00			401 00
Margaree Harbour.....			758 66		758 66
" Island.....		100 00	271 92		371 92
" River shear dams.....		2,976 83			2,976 83
Margaretville, extension of pier.....		2,581 13			2,581 13
Martin's Brook.....	290 96				290 96
Merigomish wharf.....		340 25			340 25
Meteghan River wharf.....			3,000 00		3,000 00

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>HARBOURS AND RIVERS—Con.</b>					
<i>Nova Scotia—Con.</i>					
Middle Country Harbour.....			585 00		585 00
Middle River (lower).....		1,997 17			1,997 15
shear dams.....		432 57	99 99		532 56
Middle West Pubnico.....	500 00				500 00
Minasville (Dalrymple Point)...		106 48			106 48
Minudie.....			249 67		249 67
Mira River wharfs.....		414 54			414 54
Monk's Head.....			341 20		341 20
Morden.....			253 80		253 80
Moser River.....	17,713 79				17,713 79
Musquodoboit Harbour, ballast wharf.....		287 82			287 82
Necumtuch, wharf extension.....		477 50			477 50
Neil's Harbour.....		778 76			778 76
New Glasgow.....		4,296 04			4,296 04
Noel wharf addition.....		1,977 08			1,977 08
North Shore (Victoria Co.).....			99 95		99 95
North River (St. Ann's).....		968 53			968 53
Osborne wharf.....		1,308 61			1,308 61
Owl's Head wharf.....		1,947 58			1,947 58
Oyster Pond.....		3,337 44			3,337 44
Parker's Cove, improvements.....		955 98			955 98
Parrsboro' Harbour.....		7,568 00			7,568 00
beach protection.....			285 40		285 40
Pereaux (Delhaven).....			89 28		89 28
Petite Rivière, Lunenburg Co.....			606 65		606 65
Pictou Bar.....	2,070 14				2,070 14
Pictou Island.....		821 90			821 90
Pleasant Harbour.....		740 74			740 74
Poirierville landing pier.....		2,070 50			2,070 50
Portuguese Cove, breakwater.....		10,000 00			10,000 00
Port Dufferin, breakwater at Smiley's Point.....		452 12			452 12
Porter's Lake.....		2,209 13			2,209 13
Port Greville.....			995 67		995 67
Port Hastings wharf.....		158 91			158 91
Port Hawkesbury.....	4,423 76		148 36		4,572 12
Port Hilford.....		5,836 53			5,836 53
Port Hood, closing northern entrance.....	1,408 99	15,000 98			16,409 97
Port Hood, wharf repairs.....			1,199 96		1,199 96
Port Joli West, breakwater (Herring Rocks).....		3,000 03			3,000 03
Port Lorne, breakwater at east side of harbour.....		2,958 86			2,958 86
Port Maitland breakwater.....		1,840 54			1,840 54
Port Mouton.....	3,775 84				3,775 84
Port Mulgrave (Pirate Cove).....	1,394 40				1,394 40
Port Royal (Madame Island).....		4,916 35			4,916 35
Pubnico Head wharf repairs.....			499 88		499 88
Pugwash Harbour.....		4,498 44			4,498 44
Quoddy Island wharf.....		901 77			901 77
Rabbit Island breakwater.....		3,266 31			3,266 31
Red River.....			557 79		557 79
Rivière Hébert.....			215 22		215 22
Round Hill wharf.....		323 05			323 05
Sandy Cove wharf.....		3,945 08			3,945 08
Sanford.....			104 67		104 67
Saulnierville wharf.....			1,499 69		1,499 69
Scotch Cove (White Point) breakwater.....		29,329 66			29,329 66
Sherbrooke.....	5,792 46				5,792 46
Ship Harbour.....	15,618 45				15,618 45
Short Beach breakwater.....		1,992 25			1,992 25
Skinner's Cove.....	1,216 72	1,216 73			2,433 45
South Ingonish.....	7,722 46				7,722 46
South Lake (Lakevale).....	3,348 72	3,348 72			6,697 44
Spry Harbour.....		740 74			740 74
St. Mary's River.....			507 30		507 30
Summersville.....			392 95		392 95
Sydney Harbour, wharf on south arm near Whitney Pier.....		775 91			775 91
Tancook Island breakwater on south-west side of South East Cove.....		21,036 42			21,036 42
Tangier Harbour, wharf extension.....		628 02			628 02
Tenescupe breakwater addition.....		78 85			78 85
Three Fathom Harbour.....			1,998 56		1,998 56
Tignish, Cumberland Co.....			377 07		377 07
Toney River.....		1,793 02			1,793 02



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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>HARBOURS AND RIVERS—Con.</b>					
<i>Nova Scotia—Continued.</i>					
Tracadie Harbour.....		1,199 67			1,199 67
Trenton.....	4,441 30				4,441 30
Trout River.....			299 92		299 92
Tupperville wharf.....		1,275 31			1,275 31
Upper Port Latour.....			511 12		511 12
Upper Prospect breakwater.....		3,236 98			3,236 98
Wallace Bridge wharf.....		1,315 54			1,315 54
Harbour.....			1,977 93		1,977 93
Washabuck Centre.....			199 98		199 98
Lower.....			14 25		14 25
West Advocate breakwater.....		150 27			150 27
West Berlin.....			219 69		219 69
Western Head breakwater.....		1,094 40	775 95		1,870 35
West Head (Cape Sable Island).....		989 21			989 21
Wesport wharf.....		25 34			25 34
White Point, Victoria Co. ....			150 00		150 00
Windsor.....	4,046 22		400 00		5,046 22
Woods Harbour.....	3,000 00				3,000 00
Wolfeville.....			300 00		300 00
Wreck Cove.....			199 99		199 99
Yarmouth.....	135,691 88		1,003 76		136,695 64
Yarmouth marine slip.....	315 39				315 39
Generally.....	29,950 71			2,796 24	32,745 95
<b>Totals, Nova Scotia.....</b>	<b>508,116 61</b>	<b>382,547 10</b>	<b>65,725 54</b>	<b>12,796 24</b>	<b>1,029,185 49</b>
<i>Prince Edward Island.</i>					
Annandale.....	1,364 82				1,364 82
Bay Fortune wharf.....			497 39		497 39
Bay View pier.....			194 60		194 60
Bellevue pier.....			1,210 18		1,210 18
Belle River breakwater.....			268 07		268 07
Chapel pier.....			210 88		210 88
Charlottetown (Marine and Fisheries wharf).....			528 98		528 98
Crapaud (Victoria) wharf.....			256 86		256 86
Franklin Point, North River, wharf... ..	7,181 59	30 33			7,211 92
Graham's Pond pier.....			1,000 16		1,000 16
Hickeys pier.....			1,350 96		1,350 96
Higgins Shore pier.....		1,680 83			1,680 83
Hurle's Point wharf.....			652 77		652 77
Lewis Point (Cardigan) pier.....			567 91		567 91
Long Point breakwater.....		158 67			158 67
McPherson's Cove wharf.....	1,443 40	3,176 50			4,619 90
Murray Harbour.....	713 96				713 96
Murray River.....	3,493 07				3,493 07
Munisingash Harbour breakwater.....		1,468 42			1,468 42
Morel River wharf.....			3 99		3 99
Mount Stewart wharf.....		2,216 28			2,216 28
Naufrage Pond.....			19 40		19 40
New London breakwater.....			65 42		65 42
Nine Mile Creek wharf.....			688 96		688 96
North Cardigan pier.....			150 57		150 57
North Cardigan pier.....			80 84		80 84
Point Prim wharf.....			47 40		47 40
Port Selkirk pier.....			232 06		232 06
Pownal.....	2,015 53				2,015 53
Rustico Harbour, breakwater, north side.		741 11			741 11
St. Mary's Bay pier.....			502 58		502 58
St. Peter's Bay breakwater.....		13,900 00	75 00		13,975 00
Souris Harbour.....	1,234 26				1,234 26
Knight's Point breakwater.....			4,162 09		4,162 09
Sturgeon pier.....		720 21			720 21
Summerside Harbour, breakwater.....		74,804 00			74,804 00
Tignish, protection piers.....		149 61			149 61
breakwater.....			977 20		977 20
Vernon River bridge, approach to pier... ..		74 90			74 90
Victoria (see Crapaud).....					
West Point wharf.....			1,074 89		1,074 89
Wood Island Harbour breakwater.....		1,597 22			1,597 22
Generally.....	14,975 62	2,379 60		902 62	18,257 84
<b>Totals, P. E. Island.....</b>	<b>32,422 25</b>	<b>103,097 68</b>	<b>15,319 16</b>	<b>902 62</b>	<b>151,741 71</b>

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>New Brunswick.</i>					
Anderson's Hollow wharf.....			280 27		280 27
Baie du Vin (Northumberland Co.).....			15 00		15 00
Bathurst.....	5,161 14				5,161 14
Beaver Harbour wharf.....		4,998 88			4,998 88
Belas Basin (see Mace's Bay).					
Black Harbour.....	845 59				845 59
Buetouche Beach.....		3,773 35			3,773 35
Campbellton wharf.....		19,964 42			19,964 42
Cape Bald breakwater pier.....		2,806 56			2,806 56
Cape Tormentine.....		9,226 00			9,226 00
Caraqueet wharf.....	15 00	2,786 45			2,801 45
Chance Harbour.....			350 00		350 00
Chatham.....			248 95		248 95
Chockfish, extension of breakwater.....		1,499 95			1,499 95
Clifton (Stonehaven).....	2,010 04	2,000 69			4,010 73
Cumming's Cove, Dee Island wharf.....		44 52			44 52
Delhouse Harbour.....	25,175 49	6,609 90			31,785 39
Dorchester wharf.....		17,521 13			17,521 13
Dover, Petitcodiac River.....		2,631 22			2,631 22
Durham.....			30 00		30 00
East Dover.....	3 55				3 55
Edgett's Landing wharf.....		1,037 21			1,037 21
Edmonton wharf.....			95 44		95 44
Flewelling's wharf.....	319 14				319 14
Gardiner's Creek.....			289 75		289 75
Gaspereaux River.....	29,683 54				29,683 54
Grande Anse breakwater.....		3,239 81			3,239 81
Grassey Island.....	4,955 00				4,955 00
Great Salmon River, groyne and breakwater combined.....		8,728 40			8,728 40
Hampton.....	1,528 05				1,528 05
Harvey bank.....		510 08			510 08
Heron Island wharf.....		1,569 67			1,569 67
Kouchibouguac Harbour improvements.		2,489 09			2,489 09
Lameque wharf.....		2,499 63			2,499 63
L'Étié.....	933 26				933 26
Loggieville.....	14,498 10				14,498 10
Long Island (Kenebecasis).....	1,577 07				1,577 07
Lorneville breakwater wharf.....		394 36			394 36
Lower Newcastle wharf.....		2,827 18			2,827 18
Mace's Bay wharf.....			599 18		599 18
Madawaska River at Edmundston.....		10,771 78			10,771 78
Maguapit Lake.....	49,166 85				49,166 85
Main River.....			150 13		150 13
Mills Point wharf.....		17,023 90			17,023 90
Miramichi River.....	28,774 05				28,774 05
Miscou.....		25 15			25 15
Mispece breakwater.....		7,499 25			7,499 25
Moncton wharf.....		393 47			393 47
Moss Glen wharf.....	129 77				129 77
Murphy wharf.....	733 86				733 86
Negusac.....			48 49		48 49
New Mills wharf.....		14 22			14 22
North Head breakwater (Grand Manan)		21,979 59			21,979 59
Oak Bay.....	952 28				952 28
Oak Point wharf.....		339 03			339 03
Petit Rocher breakwater.....		17,223 86			17,223 86
Pink Rock (Shepody Bay).....		2,177 74			2,177 74
Pointe du Chene breakwater.....		2,470 85	5,504 14		7,974 99
Point Wolfe wharf.....			498 12		498 12
Quaco Harbour, extension of east pier.....		2,137 50			2,137 50
Quaco West.....			77 98		77 98
Rexton (Kent Co.).....			549 49		549 49
Reid's Point wharf.....	351 92				351 92
Richibucto Harbour—					
Richibucto wharf.....	\$ 2,499 12				
Munic wharf.....	1,560 75				
Sawdust wharf.....	5,059 00				
Richibucto Cape.....		9,118 87			9,118 87
Richibucto Harbour.....		5,186 32			5,186 32
River St. John and tributaries, improvements—		12,900 07			12,900 07
Lower St. John, snagging.....	713 10				
Upper ".....	1,488 07				

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>HARBOURS AND RIVERS—Con.</b>					
<i>New Brunswick—Con.</i>					
River St. John and tributaries, improvements—					
Edmundston.....	\$ 571 10				
Little River.....	456 58				
Maguapit Lake.....	49 20				
Wapskebegon.....	484 45				
Grand Falls.....	698 24				
Nictau Lake.....	141 00				
Grand River.....	189 50				
Emmerson's Falls.....	143 45				
Gaunce breakwater.....	499 95				
Iroquois River.....	199 71				
Water's breakwater.....	381 91				
Sisson Flat.....	350 00				
Trout River.....	197 95				
Cross Lake Rapids.....	150 00				
Indian Point wharf.....	74 38				
Burton wharf.....	103 91				
Vasseur.....	72 85				
		6,970 35			6,970 35
River St. John, wharfs in tide waters (contributions to local government)—					
Burton low water wharf.....	\$ 929 75				
Carters wharf.....	301 88				
Chipman wharf.....	467 50				
Ketchums wharf.....	354 75				
Mouth of Jemseg wharf.....	317 13				
Roberts wharf.....	393 23				
Upper Jemseg.....	1,010 78				
Upper Gagetown.....	486 00				
Waterboro low water wharf	240 00				
Wrights wharf.....	509 23				
		5,010 25			5,010 25
River St. John, construction of wharfs—					
Long Island.....	\$ 894 31				
Kennedy's flat.....	237 00				
Mather's Island.....	543 33				
Chase wharf, low water.....	1,662 87				
Chase Point.....	1,962 31				
Oromocto high water.....	4,530 14				
McGowan (Sheffield).....	2,719 11				
Maugerville.....	2,941 96				
Rothsary.....	3,970 49				
Generally.....	212 22				
		19,674 24			19,674 24
River St. John, survey between Fredericton and Woodstock.....		3,978 85			3,978 85
St. Andrews.....	10,230 16	218 26			10,448 42
St. George.....	4,396 70		3,918 95		8,315 65
Sackville wharf.....		939 32			939 32
St. John Harbour—					
*Sand Point.....	133,204 86	55,312 63	34 20		188,551 69
Rodney Slip.....	14,091 80				14,091 80
York Point.....	8,372 10				8,372 10
Beacon Bar.....	468 50				468 50
Ballast wharf.....	4,023 20				4,023 20
Partridge Island.....	1,372 80	144 07			1,516 87
Outer channel.....	61,275 08				61,275 08
Negro Point breakwater.....			19,957 24		19,957 24
St. John West wharf.....		135 00			135 00
Courtney Bay examination.....		2,453 44			2,453 44
Fort Dufferin.....			2,579 47		2,579 47
St. Louis wharf.....			44 53		44 53
St. Paul (Lower Caraquet).....		140 00			140 00
Scotchtown.....			17 57		17 57
Sealeys Shoal.....	3,763 62				3,763 62
Seal Cove (Grand Manan Island).....		22 28			22 28
Shediac wharf.....		28 54			28 54
Shippigan Harbour.....			15 19		15 19
Shippigan Gully.....		2,807 48			2,807 48
Stonehaven (see Clifton),					
Tabouciac.....	135 87				135 87
Tracadie.....		1,951 64	499 99		2,451 63
Traverse.....	4,025 14				4,025 14
Tynemouth Creek.....			1,300 00		1,300 00
Welchpool (Campobello Island wharf).....		4,290 67			4,290 67

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging	Construction and Improvements.	Repairs.	Staff and Maintenance.	* Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>HARBOURS AND RIVERS—Con.</b>					
<i>New Brunswick—Con.</i>					
Whitehead (Grand Manan wharf).....	310 37	33 64	..	..	344 01
Wilson's Beach (Campobello).....	..	..	480 57	..	480 57
Upsalquich River.....	..	..	..	10,382 54	40,333 25
Generally.....	29,950 71	..	..	..	..
Totals, New Brunswick.....	442,434 61	310,531 36	37,584 65	10,382 54	800,933 16
<i>Quebec.</i>					
Anse à la Barbe breakwater.....	..	6,974 20	..	..	6,974 20
" à Beaufils protection work.....	1,534 91	49 90	..	..	1,584 81
" à la Cave, removal of boulders....	..	..	202 00	..	202 00
" aux Gascons.....	..	2,598 70	..	..	2,598 70
" aux Griffons.....	..	1,409 46	25 00	..	1,434 46
" à la Louise.....	..	..	100 00	..	100 00
" à la Grosse Roche (Saguenay).....	..	..	941 43	..	941 43
" à Pilot pier.....	..	4,662 62	..	..	4,662 62
" St. Jean.....	..	..	400 33	..	400 33
" du Cap (Cape Cove) breakwater....	..	2,038 19	..	..	2,038 19
Aylmer.....	38 20	..	..	..	38 20
Baie Lavallière.....	144 72	..	..	..	144 72
Baie St. Paul, wharf at Cap aux Corbeaux	..	1,612 41	..	..	1,612 41
Barachois de Malbaie.....	..	5,151 70	..	..	5,151 70
Batisan (R. & O. wharf).....	4 00	..	..	..	4 00
Béancourt (see River Béancourt).....	..	..	..	..	..
Belœil guide pier.....	..	..	1,151 00	..	1,151 00
Berthier (en bas) wharf.....	..	..	1,399 12	..	1,399 12
Bie (old wharf).....	..	..	599 22	..	599 22
Bie Harbour, wharf at Pointe à Côté..	..	6,501 10	..	..	6,501 10
Black Cape (Campbells Beach, Bonaventure Co.).....	..	..	349 95	..	349 95
Bonaventure East wharf.....	..	..	199 51	..	199 51
Breche à Manon, removal of boulders...	..	..	25 00	..	25 00
Cacouna wharf.....	..	2,500 55	..	..	2,500 55
Canton Fabre wharf, Lake Temiscaming	..	..	114 28	101 67	215 95
Cap à l'Aigle.....	..	..	3 00	..	3 00
Cap à la Baleine.....	..	..	200 00	..	200 00
Cap Chatte (Anse Blanche).....	..	..	25 00	..	25 00
Cap des Rosiers.....	..	..	25 00	..	25 00
Cap Santé.....	..	..	175 11	..	175 11
Cap St. Ignace.....	..	566 39	..	..	566 39
Caplan (see also St. Charles de Caplan)...	..	..	1,575 34	..	1,575 34
Carleton wharf.....	..	..	2,010 44	..	2,010 44
Caughnawaga.....	..	3,172 18	..	..	3,172 18
Cedars wharf (Soulanges Canal).....	..	..	979 14	..	979 14
Cedars wharf (St. Lawrence).....	..	..	578 25	..	578 25
Chambord.....	..	..	50 50	..	50 50
Chateauguay (Lake St. Louis).....	..	73 25	..	..	73 25
Chateau Richer.....	..	..	10 00	..	10 00
Chicoutimi Harbour improvements.....	110 00	49,078 70	..	..	49,188 70
Clark City, Seven Island breakwater....	..	9,734 52	..	..	9,734 52
Contrecoeur wharf.....	..	2,000 00	..	..	2,000 00
Coteau du Lac wharf.....	..	..	1,194 08	..	1,194 08
Crane Island (north side).....	..	..	585 10	..	585 10
Cross Point.....	..	..	162 00	..	162 00
Dorion (see River Dorion).....	..	..	..	..	..
Doucets Landing.....	..	1,672 75	214 10	..	1,886 85
Douglstown pier.....	..	4,066 60	..	..	4,066 60
East Templeton wharf.....	352 57	168 00	..	..	520 57
Escomains pier.....	..	6,547 50	..	..	6,547 50
Fassett.....	1,143 34	..	..	..	1,143 34
Father Point.....	..	..	2,2 2 75	..	2,262 75
Georgeville wharf.....	..	..	1,497 07	..	1,497 07
Grande Grève.....	..	..	25 01	..	25 01
Grands Méchins.....	..	10,822 39	..	..	10,822 39
Grand Métis.....	..	..	304 72	..	304 72
Grande Rivière de Beauré.....	..	..	408 01	..	408 01
Grande Rivière de Gaspé.....	..	..	2,772 78	..	2,772 78
Grande Vallée.....	..	..	145 72	..	145 72
Grosses.....	..	..	23 00	..	23 00
Grosse Isle, quarantine station wharf...	..	6,502 45	..	..	6,502 45
Havre de Pêche.....	..	..	31 05	..	31 05
Havre du Ruisseau.....	..	..	25 00	..	25 00
Hopetown.....	..	..	398 54	..	398 54
Hudson.....	7,785 35	..	..	..	7,785 35
Hull wharf.....	..	..	442 41	182 50	624 91

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Quebec—Continued.					
Iberville.....			23 38		230 38
Ile aux Coudres.....			2,193 59		2,193 59
- Foins.....	21,263 00				21,263 00
- Noix.....	2,249 16		1,168 53		3,417 69
Ile Perrot.....	2,027 00				2,027 00
Ile Perrot, south side.....			597 03		597 03
Ile Verte wharf.....			2,808 52		2,808 52
Ile Verte wharf west side of river.....		2,199 81			2,199 81
Jersey Cove (Co. Gaspé).....			50 00		50 00
Kamouraska wharf.....			36 54		36 54
Knowltons Landing.....			934 20		934 20
Lachine.....	88 33				88 33
Lake Aylmer (Garthby).....		1,261 92			1,261 92
Lake Deschênes.....	84 00				84 00
Lake Megantic piers—					
Agnes pier.....	\$ 4,520 00				
Moose Bay.....	2,094 28				
Lambton.....		5,959 00	6,614 28		6,614 28
Lake St. John piers—					5,959 00
St. Joseph d'Alma.....	\$ 4 00				
Generally.....	2,871 67				
Lake St. John dredging—			2,875 67		2,875 67
Roberval.....	\$ 5,150 99	5,150 99			5,150 99
Laprairie ice piers.....		6,847 50			6,847 50
La Tuque, wharf on River St. Maurice.....		2,834 05			2,834 05
Lavaltrie wharf.....		4,305 97			4,305 97
Le Petit Débarquement, wharf on north side of St. Lawrence.....		201 50			201 50
Les Eboulements.....			128 85		128 85
Lévis graving dock.....	363 70		252 59	20,891 10	21,507 45
Lévis deep water wharf, &c.....		50,359 62			50,359 62
L'Islet wharf.....			820 56		820 56
Little Pabos.....			25 00		25 00
Little River East.....			218 55		218 55
Lotbinière and Portneuf counties—					
Lotbinière.....	\$ 982 09				
Les Ecureuils.....	693 38				
Ste. Emélie.....	469 02				
Louiseville (àc Rivière du Loup en haut)		2,144 49			2,144 49
Magdalen Island breakwaters—					
Amherst.....	\$ 1,122 58				
Bassin.....	1,182 10				
Grindstone.....	1,688 03				
House Harbour.....	200 00				
Pointe à Elie.....	6,529 53				
Generally.....	4,382 23				
Maguasha.....		15,101 47			15,101 47
Malbaie (Gaspé) boat shelter.....		871 22	350 30		350 30
Maria wharf extension.....		2,471 71			871 22
Maria Cape.....			742 15		2,471 71
Maskinongé (àc River Maskinongé).....					742 15
Matane breakwater.....			2,473 35		2,473 35
Masson.....			377 02		377 02
Mille Vaches.....			33 75		33 75
Mission Point (Bonaventure Co.).....	4,335 48				4,335 48
Mistook wharf.....			1,980 04		1,980 04
Montebello.....	309 00		12 50		321 50
Montmagny, wharf in the basin.....		11,813 13	96 56		11,909 69
Montreal Harbour.....		36,396 23	1,259 83		37,656 06
Murray Bay.....			1,948 93		1,948 93
Natashquan breakwater pier.....		35 66			35 66
New Carlisle wharf.....			4,648 56		4,648 56
West.....			449 74		449 74
Newport.....			408 35		408 35
New Richmond.....		2,001 23			2,001 23
Nicolet Harbour.....	10,073 90		5,843 18		15,917 08
Notre Dame de la Salette.....				756 33	756 33
Notre Dame du Portage.....		5,398 18			5,398 18
Papineauville.....	309 00				309 00
Paspébiac East breakwater.....		3,143 11			3,143 11
wharf.....			1,709 07		1,709 07
Percé wharf (South Cove).....		218 3			218 36

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Quebec—Continued.					
Petite Décharge (Lake St. John).....		996 77			996 77
Petite River Bonaventure.....		557 62	983 26		1,540 88
Madeleine.....			75 50		75 50
Petite Tourelle.....			25 00		25 00
Pointe à Brousseau.....		229 15			229 15
Pointe aux Esquimaux.....			303 42		303 42
Pointe aux Trembles (Portneuf).....		16,103 09			16,103 09
Fortune.....			279 01		279 01
Claire.....			150 00		150 00
Maquereau.....			200 00		200 00
Piché (Témiscaming).....		9,501 31			9,501 31
St. Charles.....	22 16				22 16
Port Daniel wharf.....			2,498 70		2,498 70
West.....			399 92		399 92
Lewis wharf.....			1,016 78		1,016 78
St. Francis.....	2,757 56		39 85		2,797 41
Poupore.....	2,821 22				2,821 22
Quebec Harbour.....		214,757 85			214,757 85
Custom house wharf.....	1,006 19		1,624 21		2,630 40
Drolet's Basin.....	2,562 22				2,562 22
Repentigny wharf.....		1,584 44			1,584 44
Rigaud.....	7,144 20				7,144 20
Rimouski approach.....	12,490 16				12,490 16
wharf.....		12,863 83			12,863 83
Rivières Ashouapmouchouan and Peribonka—					
Mistassini.....	\$ 795 86				
Peribonka.....	2,212 84				
St. Félicien.....	1,361 91				
St. Prime.....	561 04				
		4,931 65			4,931 65
Rivière aux Renards.....			25 00		25 00
à la Pipe.....			3,014 80		3,014 80
Batiscan (Manitou Rapid).....			81 00		81 00
Batiscan (mouth).....	18,930 75				18,930 75
Béancour.....	17,086 75				17,086 75
Blanche.....		333 17			333 17
Blondelle.....			656 68		656 68
Bonaventure.....		18,492 50			18,492 50
Châteauguay.....	12,969 65				12,969 65
Chicot.....	1,228 30				1,228 30
du Lièvre lock.....	618 41		2,257 92	2,229 23	5,105 56
" to pay W. J. Poupore.....		32,280 88			32,280 88
du Lièvre piers—					
La Salette.....	\$ 726 17				
High Falls.....	239 31				
Val des Bois.....	395 42				
Poupore lock.....	25 20				
N. D. du Laus.....	421 89				
		1,827 99			1,827 99
Dorion.....	22,096 50				22,096 50
des Bergeronnes.....	1,522 44				1,522 44
du Loup (Fraserville).....			4,663 32		4,663 32
des Petites Capucines.....			299 86		299 86
du Loup en haut.....	30,130 20		6 00		30,136 20
Gatineau.....	905 70				905 70
Girard.....		999 64			999 64
du Sud.....			428 79		428 79
Godefroy.....	8,039 25		650 03		8,689 28
Jesus.....	20,437 58				20,437 58
L'Assomption.....	15,233 80	4,240 70			19,474 50
L'Assomption, St. Paul de Joliette.....			341 00		341 00
Maskinongé.....	26,355 81				26,355 81
Ottawa (Blanche shoals).....	17,527 60				17,527 60
Ottawa (Angers).....		40 29			40 29
Ouelle.....	6,959 39				6,959 39
Ouelle wharf.....			2 717 01		2,717 01
Richelieu ice piers.....		356 59			356 59
Richelieu improvements.....	29,119 60				29,119 60
Saguenay.....	35,656 98				35,656 98
Saguenay wharf at Rivière aux Vases.....		2,797 64			2,797 64
Sault au Mouton.....	998 52				998 52
St. Francis at Richmond.....	50,751 53		2,618 24		53,369 77
St. Francis (St. Francis du Lac).....	141 02	10,999 72	40 25		11,180 99

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>HARBOURS AND RIVERS—Con.</b>					
<i>Quebec—Continued.</i>					
Rivière St. Louis improvements.....	9,050 72				9,050 72
" St. Louis, Head Gate.....				120 00	120 00
" St. Maurice, channel between Grandes Piles and La Tuque.....	15,888 17				15,888 17
" St. Maurice (mouth).....	17,434 00				17,434 00
" Vapeur (Méchains).....			200 13		200 13
" Trois Pistoles.....	999 43				999 43
" Verte.....			2,189 34		2,189 34
Roberval wharf.....			924 58		924 58
Ruisseau LeBlanc.....		1,191 40	350 00		1,541 40
" à Patates.....			50 00		50 00
" à Sem.....			300 00		300 00
St. Alexis wharf.....		2,509 39	124 19		2,633 58
St. Alphonse de Bagotville.....		18,443 92	96 97		18,540 89
St. André de Kamouraska.....		278 01			278 01
St. Andrews wharf.....		400 00			400 00
Ste. Anne de Chicoutimi.....			4,001 25		4,001 25
" de la Pérade.....		1,693 46			1,693 46
" de la Pocatière.....		29 53			29 53
" des Monts.....	448 50	4,544 44			4,992 94
" de Sabrevois.....			1,000 77		1,000 77
St. Blaise.....			208 00		208 00
St. Charles Borromée.....		1,034 56			1,034 56
" du Caplan.....		5,008 72			5,008 72
" de Limoulu.....		2,698 80			2,698 80
" de Richelieu.....		2,169 29			2,169 29
Ste. Croix.....		2,908 37			2,908 37
Ste. Eloi (Rivière à la Loupe).....		1,009 84			1,009 84
St. Didace.....	679 43		49 37		728 80
Ste. Famille d'Orléans.....			88 16		88 16
St. François de Sales.....			505 18		505 18
" d'Orléans wharf.....		15,169 00			15,169 00
Ste. Emelie (Lecterville).....		324 20			324 20
St. Fulgence wharf.....		1,666 97			1,666 97
St. Gédéon wharf.....			1,030 51		1,030 51
St. Godefroy wharf.....			1,393 78		1,393 78
St. Ignace de Loyola.....		5,094 91			5,094 91
St. Irénée wharf.....			11 00		11 00
St. Hilaire (River Richelieu).....		4,153 78			4,153 78
St. Jean des Chailions.....	2,835 28	6,140 27			8,975 55
St. Jean, d'Orléans, wharf.....		2,394 34			2,394 34
St. Joseph, Letellier.....		4,307 22			4,307 22
St. Jerome wharf.....		4,004 26			4,004 26
St. Lambert.....			52 28		52 28
St. Laurent, d'Orléans, wharf.....			7,109 83		7,109 83
St. Mathias.....			21 70		21 70
St. Michel de Bellechasse wharf.....			1,842 44		1,842 44
St. Nicolas wharf.....			123 39		123 39
St. Omer landing pier.....		10,366 06			10,366 06
St. Pierre les Bequets.....	7,878 00	14,130 10			22,008 10
St. Placide.....	33,246 48				33,246 48
St. Siméon.....		17,772 75			17,772 75
St. Sulpice wharf.....		5,502 58			5,502 58
St. Zotique.....		9,084 74			9,084 74
Seal Rock.....			21 00		21 00
Sorel (Ste. Anne).....			1,256 14		1,256 14
" (opposite Elizabeth street).....			4 06		4 06
(harbour).....		84,237 48			84,237 48
Shigawake.....		181 30			181 30
Squateck wharf.....		2,352 82			2,352 82
Tadoussac (Anse à l'Eau).....			507 51		507 51
" Harbour.....		418 77			418 77
Terrebonne.....			435 46		435 46
Three Rivers harbour.....	81 00	14,230 81	66 40		14,378 21
Trois Pistoles wharf.....			800 86		800 86
" improvements to harbour.....		2,500 01			2,500 01
Valleyfield.....			74 33		74 33
Varennes wharf.....		10,996 48			10,996 48
Vaudreuil.....	18,655 98	4,542 97			23,198 95
Vernun.....	1,714 77		250 99		1,965 76
Villeuve.....	81 00				81 00
Whitehead (Gaspé Co.).....			25 00		25 00
Woodman's Beach (Bonaventure).....			499 50		499 50
Yamachiche.....	36,525 76				36,525 76

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>HARBOURS AND RIVERS—Con.</b>					
<i>Quebec—Concluded.</i>					
Yamaska lock and dam.....			1,117 81	1,506 99	2,714 80
" River.....	28,078 81				28,078 81
" River, landing pier at St. Michel d'Yamaska.....		5,392 35	40 25		5,432 60
Generally.....	33,882 40			20,903 85	54,876 25
Totals, Quebec.....	608,856 62	885,772 12	114,925 35	46,871 67	1,656,425 76
<i>Ontario.</i>					
Allandale wharf.....			127 30		127 30
Amherstburg wharf.....			480 98		480 98
Arnprior wharf.....		874 63			874 63
Bayfield wharf.....			1,800 00		1,800 00
Bayville (South Muskoka River) wharf.....		520 75			520 75
Beaverton, harbour improvements.....		987 16			987 16
Belle River pier.....			990 32		990 32
Bewdley wharf.....		896 91			896 91
Birdsall wharf.....		3,849 10			3,849 10
Black River (Co. Ontario).....		2,908 63			2,908 63
Blanche River improvements.....		11,913 05			11,913 05
Blanche River wharf.....		2,216 41			2,216 41
Blind River.....	18,934 39	1,476 84			20,411 23
Bowmanville.....					2,758 77
Bracebridge.....	3,365 28				3,365 28
Bronte, repairs to piers.....			1,000 00		1,000 00
Bruce Mines pier.....			392 26		392 26
Burlington Channel.....	9,920 10	34,615 58	766 87	3,011 48	48,314 03
Byng Inlet improvements.....		26 82			26 82
Callender wharf extension.....		1,118 23			1,118 23
Cape Croker, wharf addition.....		1,417 33			1,417 33
Chute à Blondeau wharf (Co. Prescott).....		6,906 62			6,906 62
Cobourg Harbour.....	31,935 15	2,681 69			34,616 84
Cockburn Island wharf.....			745 81		745 81
Colborne wharf.....		13,383 00			13,383 00
Colchester, wharf extension.....		94 22			94 22
Colpo's Bay wharf.....			2,414 69		2,414 69
Collingwood harbour.....	50,843 22		82 52		50,925 74
" graving dock.....				15,000 00	15,000 00
Croze's Landing wharf.....			98 59		98 59
Cumberland wharf.....			67 98		67 98
Curtis Landing wharf.....		987 36			987 36
Dawson's Point wharf (Lake Temiscaming).....		951 86			951 86
Detroit River, bank protection.....		4,291 00			4,291 00
Dyer Bay wharf.....			659 47		659 47
Echo Bay wharf.....			816 87		816 87
Fort William (Kaministiquia River).....	377,109 31				377,109 31
Goderich Harbour improvements.....	22,788 69	101,947 29	1,238 85		125,974 83
Gore's Landing wharf.....		287 36			287 36
Grand Bend, piers.....		637 93			637 93
Gravenhurst (Lake Muskoka) wharf.....		2 12			2 12
Griffith's Island (Colpo's Bay) wharf.....		2,598 57			2,598 57
Haldimand.....			25 00		25 00
Haileybury (Lake Temiscaming) wharf.....		664 84	56 00		664 84
Hamilton harbour improvements.....	29,181 70	2,131 31			31,313 01
Hawkestone wharf.....			768 72		768 72
Hawkesbury.....	799 62				799 62
Head River improvements.....		2,848 40			2,848 40
Hilton (St. Joseph's Island) wharf.....			1,691 69		1,691 69
Jeannette's creek.....	12,374 92		125 00		12,499 92
Juniper Island wharf.....		29 20			29 20
Honora wharf.....		2,591 98			2,591 98
Kearney wharf (Muskoka).....		482 27			482 27
Kincardine harbour.....	3,192 00		1,198 33		4,390 33
Kington harbour.....	3,645 33	213 50			3,858 83
" graving dock.....				8,324 11	8,324 11
Kingsville pier.....			991 48		991 48
Lake Nipissing, roller dam at head of French River.....		1,806 92			1,806 92
Lake Nipissing from West Bay to Monteville.....		4,617 66			4,617 66
Lakeport wharf.....		1,078 69			1,078 69
Lenington wharf.....		1,371 70	548 11		1,919 81
Lion's Head wharf.....	2,928 90	6,431 00			9,359 90



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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Ontario—Continued.					
Little Current (Northern channel)....	205,798 55				206,798 55
Little Sturgeon River.....	1,031 43				1,031 43
1 <sup>st</sup> Original.....	628 88				628 88
Magnetawan wharf.....		571 57			571 57
Matchedash Bay (Fesserton and Wau- bashehne.....	21,899 72				21,899 72
McGregor's Creek (Barrack Point, Chat- ham).....		10,023 35			10,023 35
McGregor's Creek, Tecumseh Park, re- vetment wall.....			279 35		279 35
Meaford harbour improvements.....	8,392 77	34,829 87			43,222 64
Michipicoten wharf (Lake Superior).....		350 84			350 84
Midland harbour improvements, Tiffin elevator.....	125,020 70				125,020 70
Montreal River (Latchford dam).....		480 82			480 82
Newcastle.....	2,399 54				2,399 54
New Lakehead.....	6,696 59	72 50			6,769 09
Nipissing Village (South River) wharf.....		877 51			877 51
Nipigon River.....	107,659 45				107,659 45
North Bay wharf.....			268 24		268 24
Oakville wharf.....			510 00		510 00
Orillia wharf.....			50 00		50 00
Oshawa wharf.....			745 44		745 44
Owen Sound harbour.....	24,334 50	724 80			25,059 30
Parry Sound wharf extension.....		4,114 57			4,114 57
Pelee Island, western wharf.....	3,497 61	1,567 52			5,065 13
" wharf on North Bay.....		4,691 16			4,691 16
Penetanguishene.....	26,935 57				26,935 57
Petewawa.....	300 00				300 00
Pictou.....	21,528 63				21,528 63
Pike Creek.....			197 20		197 20
Point Edward.....	27,422 16				27,422 16
Port Arthur.....	3,727 67	116,999 84			120,727 51
Port Bruce.....	5,846 25				5,846 25
Port Burwell harbour improvements.....	17,370 33	5,000 04			22,370 37
Port Colborne.....		12,079 03			12,079 03
Port Egin.....	2,090 00	42 85			2,132 85
Port Hope.....	11,693 99				11,693 99
Port Rowan wharf.....			420 46		420 46
Port Stanley improvements.....	8,548 98	65,831 17			74,380 15
Port Stanley (old wharf).....			405 50		405 50
Providence Bay, wharf extension.....		767 76			767 76
Rainy River.....	9,094 44				9,094 44
Richard's Landing, wharf.....			3,000 00		3,000 00
River Otonabee.....	3,646 04				3,646 04
River Otonabee wharf at Peterboro'.....			4,999 33		4,999 33
River Otonabee at Roger's Dam.....			234 08		234 08
River Thames at Chatham.....		5,705 00	2 97		5,707 97
River St. Lawrence, Thousand Islands (Pavilions).....		1,236 27			1,236 27
River St. Lawrence, between Kingston and Brockville.....	875 19				875 19
Roche's Point, wharf.....		514 00			514 00
Robin's Landing, wharf.....			95 33		95 33
Rockland.....	311 04				311 04
Rondeau Harbour.....	8,125 86	28,289 15			36,415 01
Rousseau wharf.....			329 19		329 19
Rosport wharf (Lake Superior).....		7,747 50			7,747 50
Ruscomb River.....	6,000 02				6,000 02
Sand Point wharf (Ottawa River).....		4,676 61			4,676 61
Sarnia.....	3,473 99				3,473 99
Sault Ste. Marie.....	87,158 65	801 71	76 13		88,036 49
Seagull (St. Joseph's Island) wharf.....		1,785 54			1,785 54
Severn River, Washago.....			431 87		431 87
Sheddenah wharf.....			498 48		498 48
Shrewsbury wharf.....			17 40		17 40
Silver Centre (Lake Temiscaming) wharf.....		4,482 64			4,482 64
Southampton—Chantry Island.....			3,747 11		3,747 11
Southampton, extension and repairs to town dock.....		40,980 95			40,980 95
South Nation River, improvements.....		9,216 50	99 50		9,316 00
Spanish River, improvements.....	16,908 25	1,962 19			18,870 44
South River (see also Nipissing Village).....	2,661 11				2,661 11
Sparrow Lake—Severn River.....		2,599 71			2,599 71
St. Joseph, Lake Huron.....			300 62		300 62
Sturgeon Falls.....	1,352 31				1,352 31

## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>HARBOURS AND RIVERS—Con.</b>					
<i>Ontario—Concluded.</i>					
Summerstown.....	31,352 70				31,352 70
Sydenham River (North Bank).....	1,295 52		170 15		1,465 67
Tenby Bay, freight shed.....			399 58		399 58
Thessalon, harbour improvements.....		2,298 90			2,298 90
Thorn Island.....	67 00				67 00
Thornbury.....	22,147 28	2,310 80			22,147 28
Tobemory harbour, glance booms.....		2,310 80			2,310 80
Toronto harbour, improvements.....	9,659 21	182,974 94			192,634 15
Treadwell.....			404 75		404 75
Trenton—Dark channel.....	41,110 50				41,110 50
Upper Ottawa River, tributaries, storage dams.....		2,754 20			2,754 20
Victoria Harbour improvements.....	150,151 09				150,151 09
Washago (see Severn River).....			4,763 98		4,763 98
Whitby Harbour improvements.....		3,495 00			3,495 00
White Cloud Island, wharf.....			679 18		679 18
Warton.....	15,372 52				15,372 52
Wingfield Basin.....	49,612 51	5,135 41			49,612 51
Winnipeg River, Throat rapids.....			18 85		18 85
Wolfe Island.....	1,446 82				1,446 82
Generally.....	11,323 80			13,735 50	25,059 30
Totals, Ontario.....	1,681,768 61	789,921 22	40,477 79	40,071 09	2,552,238 71
<i>Manitoba.</i>					
Gimli protection wall.....		4,094 31			4,094 31
Islandic River.....	3,632 25				3,632 25
Lake Dauphin (Mossy River).....	3,994 91		37 30		4,032 21
Red River (channel at mouth).....	13,563 67				13,563 67
St. Andrew's Rapids.....	2,607 21	300,023 70			302,630 91
West Selkirk.....	1,119 46				1,119 46
River Assiniboine (Portage la Prairie).....		5,211 50			5,211 50
St. Laurent.....	362 16				362 16
Selkirk wharf.....			82 00		82 00
Swan Creek.....	5,133 69		16 60		5,150 29
Westbourne.....	459 29				459 29
Winnipegosis, dredging channel at mouth of Mossy River.....	3,109 20				3,109 20
Winnipeg Beach, harbour pier.....		20 99			20 99
River—Manitou Rapids.....	188 90				188 90
Generally.....	2,909 71			4,992 38	7,902 09
Totals, Manitoba.....	37,080 49	309,350 50	135 90	4,992 38	351,559 27
<i>Saskatchewan, Alberta and Northwest Territories.</i>					
Last Mountain lake.....		1,766 37			1,766 37
Lesser Slave River improvements.....		14,908 61			14,908 61
Old Man's river at McLeod.....		23 38			23 38
North Saskatchewan river, opposite Prince Albert.....	619 54				619 54
Generally.....				3,029 79	3,029 79
Totals, Saskatchewan and Alberta.....	619 54	16,698 36		3,029 79	20,347 69
<i>British Columbia.</i>					
Campbell River wharf.....		1,495 35			1,495 35
Clayoquot wharf.....		2,189 68			2,189 68
Columbia River—					
Above Golden..... \$ 4,412 76					
At Revelstoke..... 32,083 37					
	36,496 13				36,496 13
Columbia River, to reimburse Big Bend Lumber Co.....	2,384 50				2,384 50
Coquitlam River.....	993 31				993 31
Courtney River improvements.....		1,582 45			1,582 45

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>British Columbia—Concluded.</i>					
Duncan river, removal of obstruction below Healy's landing.....		2,468 54			2,468 54
Esquimalt graving dock.....				13 671 37	13,671 37
Fraser river ship channel.....	41,091 78	22,912 10			64,003 88
" at Chilliwack.....		2,500 00			2,500 00
" at Matsqui.....	15,209 58	2,281 50			17,491 08
" upper, above Quesnel.....	2,492 10				2,492 10
Fraser river wharfs—					
Pitt River.....	\$ 2,212 80				
East Haney.....	1,647 09				
Donatelli's landing.....	1,650 32				
Dowdney.....	1,650 06				
Brownsville.....	1,638 15				
Hatie.....	2,298 11				
Rosedale and Agassiz ferry.....	1,787 64				
Port Moody.....	2,692 10				
Port Haney.....	2,044 70				
		17,821 63			17,821 63
Hardy Bay wharf.....			1,981 95		1,981 95
Kootenay River, at Proctor.....	978 33				978 33
Naas river.....	2,601 83				2,601 83
Nanaimo Harbour, north channel.....	3,251 32				3,251 32
Commercial Inlet.....		2,204 12			2,204 12
Okanagan River, channel between Okanagan Lake and Dog Lake.....	4,621 79				4,621 79
Quntino wharf.....		1,005 95			1,005 95
Salmon Arm wharf.....	917 91	515 31			1,433 22
Sidney wharf.....		6,989 82			6,989 82
Sook harbour.....	7,196 77				7,196 77
Skeena river improvements.....	12,022 62				12,022 62
Spillumcheen River, at Enderby.....			2,266 90		2,266 90
Stickine river, between Glenora and Telegraph Creek.....	5,175 49				5,175 49
Thompson river improvements.....	12,363 31				12,363 31
Union Bay wharf.....	1,443 95	2,848 48			4,292 43
Upper Lillooet River.....	2,484 01				2,484 01
Vancouver harbour.....	2,004 95				2,004 95
Victoria harbour.....	51,539 01				51,539 01
William's Head quarantine station.....		9,937 39			9,937 39
Woods and Long Lakes, opening boat channel.....	4,936 71				4,936 71
Generally.....	11,693 37			2,984 67	14,678 04
Totals, British Columbia.....	221,898 80	76,752 32	4,248 85	16,656 04	319,556 01
<i>Yukon Territory.</i>					
Lewis and Yukon Rivers, improvements.....		7,824 66			7,824 66
<i>Harbours and Rivers Generally.</i>					
General expenses of staff, &c.....	2,788 08			9,305 39	12,093 47
DREDGES AND DREDGING PLANT.					
Maritime Provinces.....		231,581 08	45,517 13		277,098 21
Ontario and Quebec.....		259,597 92	94,810 63		354,408 55
Manitoba.....		14,998 54	482 70		15,481 24
Saskatchewan and Alberta.....		24,178 58			24,178 58
British Columbia.....		249,449 35	31,171 89		280,621 24
Totals, Dredges and Dredging Plant.....		779,805 47	171,982 35		951,787 82

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work,	Dredging.	Construction and Im- provements.	Repairs.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
SLIDES AND BOOMS.					
Richelieu River (Beleil),.....				133 00	133 00
River Saguenay, ..		1,839 98	562 86	4,828 58	7,231 42
River St. Maurice, ..		27,936 91	125 03	58,679 92	86,742 86
Ottawa district—					
Black River, ..		1,653 77	1,538 58		3,192 35
Dumoine River, ..			187 86		187 86
Coulonge River, ..			1,021 12		1,021 12
Gatineau River, ..			2,134 22		2,134 22
Madawaska River, ..			1,740 84		1,740 84
Ottawa River, ..			4,682 31	25,556 99	30,239 30
Petawawa River, ..			868 39		8 8 39
Portage du Fort, ..			125 92		125 92
Rivière du Lièvre, ..				37 00	37 00
Newcastle district, ..				200 00	200 00
Fenelon Falls, ..			497 99		497 99
Collection of slides and boom dues, ..				2,734 30	2,734 30
Totals, Slides and Booms, .....		31,430 61	13,486 12	92,119 78	137,086 57

## SESSIONAL PAPER No. 19

## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>ROADS AND BRIDGES.</b>				
Interprovincial bridge, Metapedia...	10,125 80			10,125 80
Des Joachim's bridge (Ottawa River)....		2,240 11		2,240 11
Chapreau bridge.....		271 60		271 60
Hull and Gatineau bridge.....		255 37		255 37
Portage du Fort bridge.....		195 70		195 70
Pond Creek bridge.....		105 56		105 56
Ottawa city bridges and streets maintained by Government—				
Cartier Square.....			3 30	3 30
Chaudiere bridges and approaches.....		4,582 75		4,582 75
Sappers and Dufferin bridges and Wellington street		3 5 45	7,094 91	7,430 39
Lighting all the above.....			2,057 50	2,057 50
Northwest Provinces and British Columbia—				
Edmonton bridge.....		1,094 38		1,094 38
Shellmouth bridge.....	20,442 74			20,442 74
Totals, Roads and Bridges....	30,559 60	9,410 92	9,125 74	49,106 26
<b>TELEGRAPH LINES.</b>				
<i>Newfoundland.</i>				
Cape Ray (subsidy).....			250 00	250 00
<i>Nova Scotia.</i>				
Cape Breton lines.....	5,967 11	139 44	15,214 07	21,350 62
<i>Prince Edward Island.</i>				
Prince Edward Island and mainland (subsidy).....			10,033 32	10,033 32
<i>New Brunswick.</i>				
Bay of Fundy line.....			2,299 77	2,299 77
Eseuminae line.....			682 96	682 96
<i>Quebec (Mainland).</i>				
Father Point (subsidy)....			500 00	500 00
North shore of St. Lawrence, east of Bersimis...			29,073 40	29,073 40
North shore of St. Lawrence, west of Bersimis	6,097 51		12,642 08	18,739 59
Saguenay River lines, southeast side.....	1,682 26			1,682 26
<i>Quebec (Islands).</i>				
Anticosti line.....			5,514 78	5,514 78
Grosse Ile, cable and wire line.....			6,270 17	6,270 17
Ile aux Coudres (subsidy)....			300 00	300 00
Ile aux Grues.....			32 80	32 80
Magdalen Islands line.....			4,631 89	4,631 89
Cable ship <i>Tyrion</i> .....			46,623 21	46,623 21
Generally, Gulf and Maritime Provinces....			14,303 78	14,303 78
<i>Ontario.</i>				
Pelée Island.....			118 75	118 75
<i>Saskatchewan and Alberta.</i>				
Qu'Appelle-Edmonton-Athabasca....	18,714 79		31,977 21	50,692 00
<i>British Columbia and Yukon.</i>				
Alberni-Cape Beale.....			2,056 90	2,056 90
Alberni-Clayoquot.....			4,494 61	4,494 61
Ashcroft-Dawson.....	2,314 37	20,434 38	215,010 05	237,788 80
Golden-Windermere.....	2,077 07		3,932 51	6,009 58
Kamloops-Okanagan.....	7,175 90		11,222 78	18,398 68
Nanaimo-Comox.....	6,390 97		7,085 71	13,476 68
Nanaimo—Gabriola Island.....	2,657 00			2,657 00
North Thompson Valley line—Kamloops to Fennell...	4,587 08			4,587 08
Vancouver-Salt-Spring-Pender Island line.....	4,855 00		1,2 2 45	6,117 45
Victoria-Cape Beale.....	5,926 39		10,697 55	16,623 94
Victoria-William's Head.....	1,002 35			1,002 35
Generally, B. C.....			4,291 31	4,291 31
Telegraph service, generally.....			4,876 41	4,876 41
Totals, Telegraphs....	69,477 80	20,573 82	445,428 50	535,480 12

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs.	Staff and Main- tenance.	Total.
MISCELLANEOUS.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Cement testing laboratory.....	4,231 22			4,231 22
Surveys and inspections.....				
Georgian Bay survey to Montreal.....			41,274 50	41,274 50
Maritime provinces.....			10,780 03	
Quebec.....			29,837 80	
Ontario.....			15,519 37	
Manitoba.....			1,265 28	
Saskatchewan and Alberta.....			3,804 09	
British Columbia.....			3,956 22	
Generally.....			2,926 32	
Secretary's and Accountant's branches.....			31,855 31	68,090 07
Chief Architect's branch.....			24,906 02	31,855 31
Chief Engineer's branch.....			160,817 84	24,906 02
Telegraph service branch.....			6,733 05	160,817 84
Public Works agency, B.C.....			1,327 07	6,733 05
Technical and other books of reference.....			424 11	1,327 07
Deep waterways commission.....			15,811 97	424 11
Brantford monument, telephone.....	5,000 00			15,811 97
Monuments to memory of late Sir L. H. Lafontaine and late Hon. Robt. Baldwin.....	3 75			5,000 00
Paid to heirs of late Angus McPherson.....			1,000 00	3 75
Compensation to Mr. Sydney J. Dale.....			500 00	1,000 00
Compassionate allowance to Belivar Rohillard.....			500 00	500 00
Gratuity to widow of late John Pasco.....			244 00	500 00
"    John Harvey.....			130 00	244 00
"    Miss Jessie Murray, daughter of the late James Murray.....			106 75	130 00
"    the widow of the late Serephin Champagne.....			117 00	106 75
"    the mother of the late Thomas Hogan.....			104 00	117 00
"    the widow of the late Jos. Blanchard.....			104 00	104 00
"    "    J. W. Jordan.....			200 00	104 00
"    mother of the late Angus O'Neill.....			122 00	200 00
"    the widow of the late Fred Gelinac.....			358 33	122 00
"    the estate of the late James Sinclair.....			125 00	358 33
Totals, Miscellaneous.....	9,234 97		354,851 02	364,085 99

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## PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
RECAPITULATION.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Totals, Public Buildings—					
Nova Scotia.....		173,985 13	7,053 71	44,659 61	225,698 45
Prince Edward Island.....		7,198 15	4,139 97	7,614 28	18,952 40
New Brunswick.....		49,695 60	11,058 87	39,490 73	100,245 20
Quebec.....		1,208,018 87	130,874 96	142,226 02	1,501,119 85
Ontario.....		1,646,583 31	235,284 35	59,819 68	2,451,687 34
Manitoba.....		459,497 03	4,554 40	51,918 80	515,970 23
Saskatchewan and Alberta...		357,519 13	8,175 44	54,466 70	420,161 27
British Columbia...		412,821 56	11,988 04	41,745 52	466,555 12
Yukon Territory...		21,135 77		82 497 37	106,433 14
Public Buildings generally...				38,263 70	38,263 70
Totals, Harbours, Rivers, &c.—					
Nova Scotia.....	568,116 61	382,547 10	65,725 54	12,796 24	1,029,185 49
Prince Edward Island.....	32,422 25	103,097 68	15,319 11	902 62	151,741 71
New Brunswick.....	442,434 61	310 531 31	37,584 65	10,382 54	800,933 16
Quebec.....	608,855 62	885,772 12	114,925 35	46,871 67	1,656,425 76
Ontario.....	1,681,768 61	789,921 22	40,477 79	40,071 09	2,552,238 71
Manitoba.....	37,080 49	309,350 50	135 90	4,992 38	351,559 27
Saskatchewan and Alberta.....	619 54	16,698 36		3,029 79	20,347 69
British Columbia.....	221,898 80	76,752 32	4,218 85	16,456 04	319,556 01
Yukon Territory.....		7,824 66			7,824 66
Harbours, rivers, &c., generally.....	2,788 08			9,305 39	12,093 47
Totals, dredges and dredging plant,		779,805 47	171,982 35		951,787 82
" slides and booms.....		31,430 66	13,486 12	92,169 79	137,086 57
" roads and bridges.....		30,569 60	9,410 92	9,125 74	49,106 26
" telegraph lines.....		69,477 80	20,573 82	445,428 50	535,480 12
" Miscellaneous.....		9,234 97		354,851 02	364,085 99
Grand totals of expenditure....	3,595,985 61	8,142,468 37	907,000 19	2,139,285 22	14,784,739 39

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## PART II.—STATEMENT B.—Showing the Cost of the following Services for each Public Building, &amp;c. (the total for each Province being carried into statement 'A').

Name of Building.	Rents.	Salaries, of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
<i>Nova Scotia.</i>	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Amherst post office, &c.		471 86	713 12	246 78	16 00	1,447 76
Annapolis post office, &c.		457 09	209 22	1-7 00	30 00	843 31
Antigonish post office, &c.		439 61	238 05	312 00	30 00	1,019 66
Arsheath post office, &c.		1-8 85	186 25	239 78		504 88
Baddeck post office, &c.		270 79	207 00	44 75		522 54
Bridgewater post office.		109 73	186 75	176 75		473 23
Dartmouth public building.		272 79	147 68	145 88	30 00	596 35
Canso post office.		543 81	321 00	19 83		935 24
Digby post office, &c.		467 48	294 25	412 62	64 00	1,240 35
Guysboro' post office, &c.		124 05	153 32	96 38		373 75
Halifax Asst. Receiver General's Office.	1,500 00		79 35	54 57	10 00	1,643 92
" Appraiser's Office (Exam. W.H.)	1,250 00	572 55	10 90	47 09	51 52	1,932 06
" cattle quarantine.	120 00					120 00
" custom house (new).		3,581 64	1,219 04	1,779 46	1,030 48	7,610 62
" Dominion building (post office).		2,395 37	81 97	52 87	1,250 00	3,780 21
" drill shed.		1,300 00				1,300 00
" immigrant shed.		715 00	841 43	884 60	706 67	3,147 70
" immigration detention building (Trachoma).		2 15	662 53	182 66	480 00	1,327 34
Inverness post office, &c.		422 76	42 65	53 37	31 88	550 66
Kentville post office, &c.		447 49	255 62	2 0 00	50 00	993 11
Liverpool post office, &c.		448 70	221 36	126 17	18 00	817 23
Lunenburg post office, &c.		3-2 55	210 54	256 95	59 00	889 00
New Glasgow post office, &c.		479 07	423 29	596 87	100 00	1,599 23
North Sydney post office, &c.		443 44	256 60	602 89	16 00	1,318 93
" engineer's office.	30 00					30 00
Pictou custom house.		4 96	411 93			416 89
" post office.		636 00	422 23	9 30		1,067 53
Springhill post office, &c.		528 43	226 00	401 00	30 00	1,185 83
Sydney post office, &c.		583 78	238 13	935 38	58 00	1,815 29
Sydney Mines post office, &c.		450 54	220 50	81 26	30 00	1,185 30
Truro post office, &c.		4 9 20	408 06	387 5	30 00	1,274 91
Windsor post office, &c.		433 29	292 74	202 00		928 03
Yarmouth post office, &c.		433 29	97 00	916 40	72 00	1,518 69
Total for Nova Scotia.	2,900 00	18,016 42	9,284 07	10,105 57	4,193 55	44,399 61
<i>Prince Edward Island.</i>						
Charlottetown Dominion building.		2,977 08	804 94	1,399 17	225 00	5,406 19
" engineer's office.	172 00					172 00
Montague post office, &c.		193 85	166 06	73 60		433 51
Souris post office, &c.		400 86	163 95	47 37		612 18
Summerside post office, &c.		447 94	374 57	144 79	23 10	990 40
Total for Prince Edward Island.	172 00	4,019 73	1,509 52	1,664 93	248 10	7,614 28
<i>New Brunswick.</i>						
Bathurst post office, &c.		492 01	586 12	666 13		1,784 26
Campbellton post office, &c.		443 29	298 25	197 30	32 25	971 09
Carleton, St. John West, post office, &c.		274 69	50 03	5 51		330 23
Chatham post office, &c.		333 61	341 12	430 84	14 50	1,120 07
" engineer's office.	40 00					40 00
Dalhousie post office, &c.		439 40	239 05	40 5	20 35	739 34
Fredericton post office, &c.		507 57	297 29	1,199 59	51 00	2,055 45
Grand Falls post office.	150 00					150 00
Marysville post office, &c.		162 50	187 02	23 00		372 52
Moncton post office, &c.		345 80	354 41	630 51	100 50	1,581 22
Newcastle post office, &c.		462 91	360 15	335 40	35 00	1,193 46
Richibucto post office, &c.		433 29	255 44	2 2 0		930 77
St. John custom house.	52 00	2,389 00	1,778 28	592 18	253 70	5,045 66
" cattle quarantine.		394 00			722 56	1,116 56



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## PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies, for Engineers.	Heating.	Lighting.	Water.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>New Brunswick—Concluded.</i>						
St. John detention hospital.....	2,090 61	150 00	231 23	79 32	17 23	2,568 39
" immigrant building.....	2,631 65	1,824 00	1,418 34	567 47	61 37	6,502 83
" post office.....		2,748 92	1,037 00	3,382 11	166 35	7,334 38
" savings bank.....		6 30	290 68	97 96	4 38	399 32
Trandie Lazaretto.....		533 07	1,249 72			1,782 79
St. Stephen post office, &c.....		550 47	200 50	334 20	48 00	1,133 17
Sussex post office, &c.....		329 25	398 20	120 81	25 00	873 26
Woodstock post office, &c.....		481 29	280 97	274 68	34 00	1,070 94
" drill hall.....		450 00			25 00	475 00
Total for New Brunswick.....	4,964 26	13,901 37	9,853 80	9,160 11	1,611 19	39,490 73
<i>Quebec.</i>						
Acton Vale post office.....		461 57	32 25	275 58	24 00	793 40
Aylmer post office.....		124 56	205 00	201 74	24 75	556 05
Berthierville post office.....		6 52	206 15	87 47	30 25	330 39
Buckingham post office.....		133 80	216 45	128 70	37 20	516 15
Chicoutimi post office, &c.....	200 00	532 96	345 00	366 87	310 00	1,754 83
Coaticook post office, &c.....		467 79	291 00	321 90	50 00	1,130 69
Drummondville custom house.....	140 00					140 00
" post office.....		463 92	195 50	194 20	22 00	875 62
Dundas custom house.....	12 50		80 00		92 50	185 00
Fraserville post office, &c.....		510 04	475 00		150 00	1,217 68
Granby post office, &c.....		336 35	221 10	156 55	150 00	864 00
Hochelaga post office.....		216 58	182 15	224 30	10 67	633 70
Iberville post office, &c.....		554 70	92 00	27 17		673 87
Hull post office.....		162 50	218 00	559 85	244 65	1,185 00
Ile Verte engineer's office.....	84 00					84 00
Joliette post office.....		443 28	312 79	126 00	108 00	990 07
Lachine post office.....		125 87	167 22	184 43	14 76	492 28
Lacbeche post office.....			240 00			240 00
Laprairie post office.....		168 72	166 20	31 86	45 00	411 78
L'Assomption post office.....		276 10	251 00	199 69	50 00	776 79
Lévis post office, &c.....		507 24	426 28	535 41	20 00	1,488 93
Longueuil post office.....		348 60	166 06	145 76	39 50	699 92
Montmagny post office.....	134 00	440 89	248 41	89 66	50 00	962 96
Montreal Civil Service Exam. office.....	100 00					100 00
" custom house.....	52 50	6,997 84	1,465 81	1,895 37	350 23	10,761 75
" Dominion public buildings.....	350 15	1,856 30			11 00	2,217 51
" drill hall.....		950 00				950 00
" engineer's office.....	1,58 41			16 76	49 00	1,634 17
" examining warehouse.....	55 00	12,189 22	1,312 33	3,203 51	703 73	17,463 79
" immigration office.....	2,030 90	513 74	273 05	431 19	3,251 88	5,016 25
" Inland Revenue office.....		1,228 05	297 00	239 86	99 97	1,864 88
" post office (main).....	397 00	20,755 78	1,485 23	17,155 49	865 30	40,658 80
" Station A (Wellington St.).....				30 50		30 50
" Station B (St. Catherine St.).....		1,103 73	272 12	903 91	231 83	2,511 59
" Station B temporary quarters.....	550 00	160 42	3 60	85 48		799 50
" other rented branches, sorting rooms, &c.....	5,393 50	630 35	240 79	1,160 23	167 81	7,592 68
Nicolet post office.....		592 53	229 00	10 20		831 73
Nominique immigrant building.....		383 00	147 25	18 99		549 24
Peribonka immigrant building.....		325 00	77 50	3 26		405 76
Quebec Citadel buildings.....	17 00	594 70	786 25	217 54		1,615 49
" cutter's office.....		592 70	466 05			1,058 75
" custom house.....		698 98	1,212 39	263 55	800 00	2,974 92
" engineer's office.....	246 85	121 50				371 35
" examining warehouse.....		1,797 29	1,694 46	74 50	450 00	4,016 25
" immigration building.....			1,100 94	1,358 40		2,459 34
" observatory.....				83 07	50 00	133 07
" post office.....	141 00	2,973 62	974 24	1,034 43	750 00	5,873 29
" Queen's wharf building. (Mar- ine, signal service, cutters, gas inspection, weights and measures).....		15 00	987 10		750 00	1,752 10
" Trachoma hospital.....	99 00		1,648 35	302 08	1,569 74	3,519 17
" St. Sauveur post office.....	421 50	130 00				554 50
" St. Roch post office.....			56 95	31 10		88 05
Richmond post office, &c.....		571 05	441 99	286 38	25 00	1,324 42
Rigaud arsenal.....		12 25				12 25
Rimouski post office, &c.....	15 00	190 37	328 57	127 90	75 00	736 84
Roberval immigration shed.....		325 00	314 88	259 53	16 00	915 41
Sherbrooke post office, &c.....		712 50	508 51	1,081 35	50 00	2,352 36
Sorel post office, &c.....		622 53	445 29	791 54	252 44	2,111 80

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## PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
Quebec—Continued.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
St. Eustache post office, &c.....	288 00					288 00
St. Henri post office, &c.....			221 49	122 80	96 25	373 57
St. Hyacinthe post office, &c.....		667 54	173 42	458 64	150 00	1,449 60
" Inland revenue.....		458 74	219 06	36 24	100 00	814 04
" drill hall.....		450 00				450 00
St. Jérôme post office, &c.....		457 01	325 98	134 48	27 00	944 47
St. John's post office, &c.....		392 43		312 50	70 00	774 93
" engineer's office.....	40 00					40 00
St. Louis du Mile End post office.....		669 04	208 50	355 87	14 22	1,247 69
Ste. Anne de Bellevue post office.....	100 00					100 00
St. Gabriel de Brandon post office.....	352 00			30 00		422 00
Terrebonne post office, &c.....		330 92	143 04	86 72		560 64
Thetford Mines post office, &c.....		185 20	344 79	273 55	16 25	819 79
Three Rivers drill hall.....		462 28	136 00	1 75		600 03
" custom house.....	664 61	403 91	199 10	808 74		2,076 36
Valleyfield post office, &c.....	94 25	884 41	519 16	789 20		2,317 02
Victoriaville post office, &c.....		475 92	375 68	96 37	90 00	1,037 97
West Farnham post office.....	1 00	159 60	120 04	206 86	50 00	537 50
		319 21	104 20	50 00	20 00	502 45
Total for Quebec.....	13,551 17	69,130 91	24,908 38	38,620 52	9,648 83	155,859 81
Ontario.						
Alexandria post office, &c.....		539 82	305 12	201 75		1,046 69
Almonte post office, &c.....		452 64	202 62	60 92	60 75	776 93
Amherstburg post office, &c.....		447 69	207 00	171 10	26 25	852 04
Arnprior post office, &c.....		498 01	339 05	479 32	36 07	1,352 48
Barrie post office, &c.....		463 29	283 00	303 18	50 00	1,099 47
Belleville post office, &c.....		769 87	536 11	2,426 33	83 25	3,809 56
Berlin post office, &c.....		470 21	291 95	317 82	19 03	1,099 01
Bowmanville post office, &c.....		458 49	176 85	116 00	20 00	771 34
Brampton post office, &c.....		450 39	219 50	165 28	33 00	868 17
Bramford post office, &c.....		691 43	716 49	341 29	38 00	1,787 21
Bridgeburg post office, &c.....		340 55	187 50	60 29	30 00	618 34
Brockville post office, &c.....		626 59	437 50	570 25	170 00	1,804 34
Carleton Place post office, &c.....		327 10	192 25	102 52		621 87
Cayuga post office, &c.....		56 68	75 65	8 50		140 83
Chatham drill hall.....		450 00				450 00
" post office, &c.....		642 12	260 92	133 79	21 25	1,058 08
Clinton post office, &c.....		225 98	252 27	201 06	2 00	681 31
Cobourg post office, &c.....		481 04	218 25	673 55	34 12	1,436 96
Cornwall post office, &c.....		537 76	298 60	648 16	37 50	1,522 02
Deseronto post office, &c.....		522 79	280 00	309 97	39 00	1,211 76
Dundas post office, &c.....	625 00	54 08	45 05	15 75		789 88
Fort William post office, &c.....		536 60	490 25	347 79	83 22	1,457 86
" engineer's office.....	379 00					379 00
Galt post office, &c.....		469 71	303 52	75 05	34 28	882 56
Gananoque custom house.....			4 99	207 58	14 72	227 29
" post office.....		1 50	266 08	282 00	34 37	583 95
Goderich post office, &c.....		447 29	2 0 92	140 99	45 00	894 20
Guelph post office, &c.....		619 32	391 00	674 32	39 60	1,724 24
Hamilton customs exam. office.....		700 00		132 95	40 60	873 55
" Inland revenue.....		60 00		18 16	23 45	101 81
" drill shed.....		55 62	124 57			180 19
Hamilton post office, &c.....		2,508 95	1,173 33	2,127 87	1,024 10	6,834 25
Hawkesbury post office, &c.....		464 60	80 81	138 42	22 25	706 08
Ingersoll post office, &c.....		497 49	316 11	432 82	19 76	1,266 18
Niagara post office, &c.....		452 39	287 35	216 24	74 08	1,030 66
Kingston exam. office.....			43 50			43 50
" custom house.....		253 25	463 59	104 70	59 25	880 79
" drill hall.....		650 00				650 00
" inland revenue office.....	2,202 50	608 89	537 10	34 30	47 03	3,429 82
" military college.....		3,745 50				3,745 50
" post office.....	171 38	725 88	426 90	419 55	59 50	1,803 21
Lindsay post office, &c.....		442 95	259 50	125 55	22 50	850 50
London custom house.....		1,214 29	905 23	649 46	122 60	2,891 58
" drill hall.....		778 00				778 00
" engineer's office.....	707 00					707 00
" post office.....		1,570 27	695 35	1,813 01	70 00	4,148 63
L'Orignal post office.....	31 25	629 33	416 00	275 40	22 50	1,383 23
North Bay post office.....	40 00	549 57	262 02	214 00	79 35	1,105 54
Napanee post office, &c.....		467 06	286 48	325 00	24 38	1,102 95
Niagara Falls post office, &c.....						

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## PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Ontario—Concluded.</i>						
Orangeville post office, &c.....		442 19	268 51	896 45	20 00	1,627 15
Orillia post office, &c.....		418 03	255 25	104 95	16 25	794 48
Oshawa post office, &c.....		462 57	216 20	213 77	13 11	935 65
Owen Sound post office, &c.....			312 75			312 75
Ottawa archives building.....		1,260 00	728 94	614 50		2,603 44
" astronomical observatory.....		1,571 55	701 34	830 66		3,103 55
" bacteriological laboratory.....			77 50	329 00		406 50
" experimental farm.....			1,841 90	201 56		2,043 46
" Geological museum.....		850 00	907 08	1,178 88		2,935 96
" Major's hill park green house.....		300 00	336 55			636 55
" National art gallery & fisheries museum.....						
" parliamentary and departmental buildings.....		120 00	114 30	404 00		638 30
" post office.....		36,169 16	57,002 06	26,729 03		119,900 25
" printing bureau.....		3,120 00	1,433 44	1,733 50		6,286 94
" Royal mint.....		7,281 41	6,810 99	5,801 00		19,893 40
" supreme court.....			244 20	1,272 86		1,517 06
" workshops (D.P.W.), &c.....		1,320 00	781 38	968 50		3,069 88
" sundry rented buildings.....		1,020 00	1,184 75	641 50		2,846 25
Paris post office, &c.....	130,110 22	7,655 00	8,918 73	10,757 32		157,441 27
Pembroke post office, &c.....		448 29	140 13	72 58	61 60	722 60
Peterboro' custom house.....		442 85	251 72	202 70	36 00	933 27
" post office.....		334 05	256 23	110 50	50 00	750 78
Petrolia post office, &c.....		499 54	277 43	324 40	75 00	1,176 37
Pictou post office, &c.....		459 00	214 41	263 87	39 25	976 53
Port Arthur post office, &c.....		406 71	234 75	189 02	13 50	903 98
" immigrant building.....		455 19	418 00	200 15	82 98	1,156 32
" engineer's office.....			19 25		20 75	40 00
Port Colborne post office.....		312 00		19 00		331 00
" engineer's office.....		390 06	31 25	145 40	15 00	581 71
Port Burwell engineer's office.....		146 25				146 25
Port Hope post office, &c.....	10 00					10 00
Prescott custom house.....		467 81	303 25	548 65	8 52	1,328 23
" post office.....				4 73	30 00	34 73
Sandwich post office, &c.....		520 79	409 95	111 96	60 00	1,102 70
Sarnia post office, &c.....		338 97	75 50	113 39	11 55	539 41
Sault Ste. Marie post office, &c.....		594 38	336 35	209 51	44 00	1,184 24
Smith's Falls post office, &c.....		719 69	348 90	515 95	58 19	1,642 73
Stratford armoury.....		444 64	180 90	175 47	66 75	867 76
" post office, &c.....		450 00				450 00
Strathroy post office, &c.....		725 66	3 9 35	227 62	29 00	1,351 63
St. Catharines drill hall.....		468 69	2 19 10	159 57	19 80	807 06
" post office, &c.....		570 00				570 00
St. Mary's post office, &c.....		526 39	241 10	518 42	43 32	1,329 23
St. Thomas post office, &c.....		380 40	222 70	193 45	21 02	817 57
Toronto Assistant-Receiver General's, & inland revenue offices.....		464 54	250 00	256 46	22 49	993 49
" civil service.....		1,122 50	362 05	204 06	25 55	1,715 16
" custom house.....	35 00					35 00
" custom post office.....		4,360 02	781 74	713 99	74 77	5,930 52
" drill shed.....	1,500 00					1,500 00
" engineer's office.....		2,353 02	32 50			2,385 52
" examining warehouse.....	777 00					777 00
" immigrant sheds.....		5,164 99	1,280 10	355 25	76 17	6,876 51
" steamboat inspectors office.....	833 33					833 33
" post office.....	900 00					900 00
" station H.....	30 00	8,724 44	1,297 21	5,247 27	440 32	15,739 24
" " A.....	525 00					525 00
" " E.....	1,489 95	1,753 75				3,243 70
" " B.....		5 75		2,289 12		2,294 87
" " F.....	1,000 00	141 25		323 33		1,464 58
" " G.....	15 00	569 60	455 26	480 63	29 32	1,579 31
" " C.....		575 71	203 86	496 33	10 04	1,285 94
" " G.....	843 30	135 60		182 09		1,160 99
" junction post office, &c.....		486 29		418 15	45 00	949 44
" pneumatic tubes.....	220 00					220 00
Trenton post office.....		487 54	247 00	338 42	75 75	1,148 71
Walkerton post office, &c.....		439 59	374 78	259 45	22 50	1,096 32
Windsor drill hall.....		450 00				450 00
" post office, &c.....		1,053 55	450 75	804 69	96 00	2,410 99
Wingham post office.....		231 50	305 62	132 27	20 05	689 44
Woodstock armoury.....		400 00				400 00
" post office, &c.....		588 12	369 83	472 03	35 20	1,465 18
Total for Ontario.....	112,903 18	129,185 83	106,677 12	86,159 95	4,473 31	469,399 39

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## PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
<i>Manitoba.</i>	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brandon experimental farm.....			461 11	76 09		537 20
" immigrant building.....			493 52	130 91	57 01	681 44
" post office, &c.....		1,072 27	871 21	1,322 36	44 09	3,309 93
Dauphin immigrant station.....			58 13			58 13
lands office, Indian department	1,005 00		170 00			1,175 00
East Selkirk Immigrant shed.....	10 00					10 00
" post office.....		39 03	285 29			324 32
Lockport engineer's office.....	54 00					54 00
Minnedosa Dominion lands.....	60 00					60 00
Neepawa post office, &c.....			540 00			540 00
Portage la Prairie post office, &c.....		589 85	614 24	266 81	18 10	1,489 00
St. Boniface post office.....		346 65	21 00		20 68	388 33
Virden immigration building.....	250 00		10 50			266 50
Winnipeg Custom house.....		915 00	589 68	195 70	107 06	1,807 44
" express parcel office.....	1,200 00					1,200 00
" Dominion lands office.....		108 00	108 50	4 35	51 60	275 45
" Dominion public buildings.....	81 00		58 00	9 00		324 65
" engineer's office.....	820 70	5 50				826 20
" examining warehouse.....			372 66	133 35	24 66	530 67
" immigration building.....			3,907 21	1,993 60	867 80	6,768 61
" weights and measures office.....	600 00					600 00
" post office (old).....	4 85	6,997 81	3,006 85	8,668 38	723 77	19,491 69
" post office (new).....		4,074 10	2,807 80	1 50	413 16	7,296 56
" post office, sorting room, C.P.						
" Ry station.....	1,025 00					1,025 00
" Postal station.....	1,295 00	617 75	190 73	6 80	10 50	2,120 78
" railway commissioner's office	490 00			9 05		499 05
<b>Total for Manitoba.....</b>	<b>6,895 55</b>	<b>14,765 99</b>	<b>14,662 43</b>	<b>12,817 90</b>	<b>2,341 43</b>	<b>51,483 30</b>
<i>Northwest Provinces.</i>						
Battleford Dominion lands office.....	800 00		327 00			1,127 00
" immigration building.....	590 00		258 54			848 54
Calgary custom house.....	2,400 00	10 85		100 76		2,511 61
" engineer's office.....	725 00					725 00
" immigrant building.....	30 00		213 53	65 75	40 00	349 28
" post office, &c.....	210 00	2,248 78	920 11	7,588 35	300 00	11,267 24
Davidson immigrant building.....			4 75			4 75
Irvine immigrant hall.....	25 00					25 00
Edmonton Dominion lands and registry						
office.....		656 20	198 44	308 60		1,163 24
" immigrant shed.....			417 92	242 51	303 50	963 93
" post office.....	4,102 50	947 45	234 94	1,393 81	23 43	6,702 13
Estevan Dominion lands office.....	520 00					520 00
Humboldt Dominion lands office.....	720 00		132 50	57 35		909 85
Indian Head experimental farm.....			245 21	141 76		386 97
" forestry station.....	150 00		431 60			581 60
Lacombe experimental farm.....			162 17	90 74		252 91
Lethbridge court house and custom house			123 20	163 77	72 50	359 47
" immigration building.....			103 95	121 55	72 50	303 00
" experimental farm.....			132 33	5 87		138 20
" post office.....		601 85	38 50	147 55	25 00	812 90
Medicine Hat court house.....		1 75		4 45		6 20
" post office, &c.....		191 38	112 89			304 27
Macleod custom house.....			217 01	76 50	29 45	322 96
" immigration office.....	150 00					150 00
North Battleford immigrant building.	200 00					200 00
Prince Albert Dominion lands and regis-						
try office.....		7 55		134 95		142 50
" immigrant shed.....	1 00		187 50	34 68		223 18
" post office.....		1,321 25	1,224 59	1,018 59	132 48	3,696 91
Red Deer Dominion lands office.....		720 44				720 44
Regina clerk of works office.....	378 00					378 00
" Dominion lands and registry office		1,323 40	612 40	489 55	60 00	2,485 35
" immigrant building.....			123 75	47 20	31 70	202 65
" post office.....		931 15	1,067 94	844 85	35 00	2,878 94
Rosetown immigrant building.....			5 00			5 00
Saskatoon post office.....	1,120 00	272 53	433 82			1,826 35
Strathcona immigrant shed.....	216 00		288 80		14 40	519 20
Saskatoon immigrant shed.....			1,260 75			1,260 75
Vermilion immigrant building.....	352 00		103 75			455 75
Vegreville immigrant building.....	240 00		20 65			260 65
Mooseneau post office.....		699 65	1,282 73	970 24	56 45	3,009 07
" immigrant building.....			112 00			112 00

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## PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies, for Engineers.	Heating.	Lighting.	Water.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Northwest Provinces—Concluded.</i>						
Moosejaw Dominion lands office.....	1,950 00					1,950 00
Lloydminster immigrant building.....			429 91	31 15	22 50	483 56
Moosejaw inland revenue.....	450 00					450 00
Yorkton Dominion lands office.....	975 00	15 40	31 50	20 30		1,042 20
immigrant building.....			216 85			216 85
Sedgwick immigrant building.....	210 00		22 00			232 00
Stettler immigrant building.....	505 00		30 60			535 60
Swift Current immigrant building.....			110 65			110 65
Total for N.W.T. ....	17,019 50	9,952 63	11,839 78	14,105 83	1,218 91	54,136 65
<i>British Columbia.</i>						
Atlin post office.....		162 50	85 00			247 50
Esquimalt custom house.....			32 00			32 00
Agassiz experimental farm.....			91 60			91 60
Kamloops post office.....		679 70	311 00	523 58	12 00	1,556 88
Coldwood telephone repair office.....	60 00					60 00
Nanaimo post office, &c.....		760 00	178 00	412 25	27 00	1,377 25
Nelson post office, &c.....		687 75	548 20	724 95	54 00	2,014 90
New Westminster Indian and Fisheries departments.....		681 05	239 00	25 66	23 37	969 08
" post office.....		772 32	497 50	972 34	56 74	2,298 90
Roseland post office, &c.....		681 60	235 28	910 80	97 06	1,924 74
Vancouver examining warehouse.....	3,744 00		135 25	706 27		4,585 53
" post office.....	786 00	2,465 02	601 95	2,283 00	87 17	6,223 14
" steamboat inspection office.....	300 00					300 00
" Chinese isolation hospital.....	2,916 55		794 68	1,686 30	297 50	5,195 03
Victoria Marine and Indian office (old custom house).....		802 50	280 40	108 60	14 00	1,205 50
" post office.....		3,839 50	1,200 87	1,538 15	41 05	6,619 57
" old post office.....		82 65	14 00		53 55	150 20
" hydro-service office.....	84 00		1 90	27 55		113 45
" immigrant building.....			3 70			3 70
William's Head quarantine station.....			5,778 40			5,778 40
Total for British Columbia..	7,890 55	11,614 59	11,059 34	9,919 45	763 44	41,247 37
<i>Yukon.</i>						
Whitehorse post office, &c.....		2,000 00				2,000 00
Dawson, sundry buildings (not appor- tioned).....						80,497 37
Totals for Yukon (carried into statement A, page 14).....		2,000 00				82,497 37

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PART II, STATEMENT C.—Showing the amounts loaned by government under the authority of special Acts of Parliament, and upon the security of debentures of the borrowing corporation. The works upon which these funds are expended are of a quasi-public nature, and the several advances have been made upon the recommendation of the Honourable the Minister of Public Works, and after inspection by the Chief Engineer.

To whom Loaned.	Parliamentary Authority.	Purpose.	Amount.
			\$
Harbour Commissioners of Quebec...	62-63 Vic., ch. 34, sec. 34..	Improvements to Princess Louise dock., .....	87,254 91







PART III

REPORT

ON

PUBLIC BUILDINGS THROUGHOUT THE DOMINION

FOR THE FISCAL YEAR ENDED MARCH 31, 1909

BY THE

CHIEF ARCHITECT



## PUBLIC WORKS, CANADA,

CHIEF ARCHITECT'S OFFICE,

OTTAWA, August 2, 1909.

NAPOLÉON TESSIER, Esq., Secretary,  
Department of Public Works.

SIR,—I am sending you herewith, annual report of works executed under this branch during the fiscal year ended March 31, 1909.

D. EWART,  
*Chief Architect.*

## PROVINCE OF NOVA SCOTIA.

## AMHERST.

## PUBLIC BUILDING.

Concrete footpaths with curb and gutter were laid along front and side of building, and the basement windows had repairs made to sills, frames, glass and screens.

Work done under supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## ANNAPOLIS.

## PUBLIC BUILDING.

The masonry was pointed; the walls and ceilings were kalsomined; the interior woodwork was painted; the janitor's quarters had new hardwood floors laid, walls papered and ceilings kalsomined and woodwork painted and repaired; annex had roof woodwork repaired, iron work painted, interior plaster repaired and tinted, and oil cloth was supplied for one office.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## BRIDGEWATER.

## PUBLIC BUILDING.

This building, which was described in my report of last year, is nearly completed, fitted up and has a hot water heating system installed.

## GLACE BAY.

## PUBLIC BUILDING.

This building, which was described in my report of last year, is still in progress of erection.

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## HALIFAX.

## DOMINION BUILDING.

On 18th July, 1908, a contract was entered into for the execution of the various necessary works involved in altering this building to render it suitable for post office and Dominion savings bank purposes. These will include the removal of all the internal partitions, floors, stairs, plastering, &c., and the introduction of new fire-proof construction throughout the interior of the building. The partitions and the lining of the outer walls of basement, the vaults on basement, ground floor and first floor are to be brick; the partitions on the first and second floors are to be iron and plaster; the public lobby floors on ground floor and first floor are to be marble mosaic, those of the corridors and toilet rooms throughout are to be terrazzo, and, on the stairways and in the lobbies, there are to be marble dadoes. In the basement, the newspaper sorting room is to be floored in wood and the remaining rooms in cement concrete; the rooms on ground floor, first floor and second floor are to be floored in wood on cement concrete. The basement will contain the boiler room, a newspaper sorting room, a vault 13 feet by 12 feet, the men's W.C's., and space for storage; the ground floor will be entirely devoted to the post office; the first floor to the offices of the Post Office Inspector and his staff, the Dead Letter Office, and the Money Order and Dominion Savings Bank Offices, the W.C's, &c., and the third floor to the Customs parcel post, the Railway Mail Service, extra office room, the caretaker's quarters and W.C's.

Plans and specifications prepared by this department.

## PICTOU.

## POST OFFICE.

The front gable was repaired and painted; the water conductor from roof was continued to sewer and the plumbing and heating services were repaired.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## SPRINGHILL.

## PUBLIC BUILDING.

Repairs were made to wood and plaster; the walls and ceilings were tinted; the tower clock room and the stairway were sheeted and the woodwork of the building was painted.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## SYDNEY.

## POINT EDWARD QUARANTINE.

A large number of repairs and improvements were made to the station; new drains were laid and all the hospital buildings painted in and out. The steward's residence was repaired and painted and had the ceilings tinted.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## SHELBURNE.

## PUBLIC BUILDING.

This building, which was described in my last year's report, is still in progress of erection.

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## TRURO.

## ARMOURY.

This building, which was described in my report of last year, is completed.

Plans and specifications prepared by this department.

Clerk of works, D. Henderson.

Contractor for construction of building, Frank Wilson.

Contractor for hot water heating, Frank Dexter Co.

## PUBLIC BUILDING.

The main entrances were improved, the doors glazed and rearranged; the lobby doors were repaired and glazed; a post office box was built in vestibule, and sundry small repairs were made.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## WESTVILLE.

## PUBLIC BUILDING.

This building, which was described in my report of last year, is completed, fitted up and furnished. A hot water heating system was installed.

## PROVINCE OF NEW BRUNSWICK.

## CAMPBELLTON.

## PUBLIC BUILDING.

The concrete footpaths were repaired and in part renewed; new door locks supplied and the concrete floor in basement repaired.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## CHATHAM.

## MIDDLE ISLAND QUARANTINE.

A boat landing butt was built and repairs to old one made as also a ladder and gangway.

At the hospital, a new bath room and W.C., with all necessary plumbing and fixtures was provided and a drain laid to river with terra-cotta pipe.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## PUBLIC BUILDING.

The lobby screen, fittings, drawers, boxes, &c., were improved and in part renewed; the woodwork was repaired; the waterclosets ventilated, and the front water conductor renewed.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

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## FREDERICTON.

## PUBLIC BUILDING.

Concrete footpaths with curb and gutter were laid along front and side of lot; the front entrance was improved by a new door, &c.; a rear porch was built and improvements made to rear entrance, and sundry ordinary repairs were made to woodwork, paint, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## ST. JOHN.

## CUSTOM HOUSE.

An inter-communicating telephone system of twenty-five telephones was installed; a new signal mast with yards, fittings, &c., was rebuilt to replace that on south tower which was destroyed by a storm; a partition was built in basement of north wing and an additional room formed; 400 feet of 2½-inch linen hose were supplied; filing cabinets were built and shelving and fittings for the vault; some additional furniture and linoleum were supplied; a considerable amount of painting, varnishing and kalsomining was done, and repairs were effected to roof, plastering, carpentry, plumbing, heating, hoist, machinery, furniture, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## MILITARY STORES BUILDING (ADDITION).

This building, which was described in my report of last year, has been completed and furnished with a hot water heating apparatus.

Plans and specification prepared by this department.

Clerk of works, W. J. Fitzgerald.

Contractor for construction of building, Flood & Bate.

Contractor for heating apparatus, Jeremiah Buckley.

## POST OFFICE.

The offices, halls and the caretaker's apartments were cleaned, whitened, painted and varnished. There were supplied 250 feet of 2½-inch linen hose, two large sorting cabinets, sorting frames, tables, desks, &c., for letter carriers flat, blinds for caretaker's apartments, chair for accountant, new door springs, a cabinet for letter box keys, two trucks for railway mail delivery, one steel locker for mail packages, new packing and cable for hoist and chairs for the C. S. examining room. The north tower was pointed and repairs and renewals were made to stonework, woodwork, glazing, paint, plaster, pipes, wires, fixtures, heating boiler, &c.

At the Intercolonial Railway station a mail room was fitted with desk, tables, shelves, &c.

Work supervised by D. H. Waterbury, Superintendent Public Buildings, N.B.

## ST. JOHN WEST.

## POST OFFICE.

The caretaker's apartments were cleaned, tinted and painted. New stoves and pipes were supplied and repairs were made to water supply, plumbing, plaster, &c.

Work supervised by D. H. Waterbury, Superintendent Public Buildings, N.B.

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## ST. JOHN.

## SAVINGS BANK.

Minor general repairs were effected, under the supervision of D. H. Waterbury, Superintendent Public Buildings, N.B.

## IMMIGRATION BUILDING.

New furnace pipes, window screens and new firing tools were supplied, the chimney was pointed and repairs were made to W.C.'s, sinks, plumbing, ranges, furnace, roof, gutter, down pipes, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## DETENTION HOSPITAL.

Additional furniture was provided. Two new bathrooms were formed and fitted up, some changes were made in partitions, new floor was laid in kitchen and room adjoining, three windows were iron grated; fire escapes were provided; a new hot water boiler was installed; furniture, &c., was provided for matron; painting, tinting, varnishing and papering were effected, and general repairs done throughout.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## QUARANTINE STATION, PARTRIDGE ISLAND.

At doctor's residence, a new metal ceiling was hung in kitchen, the doors and windows were screened, the furnace smoke pipe was renewed and repairs were made to carpentry and plaster. At the hospital, two rooms were painted for the matron; at the detention buildings, hospital and disinfection house, repairs were made to range, furnace, water conductors, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## RICHIBUCTO.

## PUBLIC BUILDING.

An artesian well was bored in basement, resulting in a better supply of water than before, and sundry repairs were made to plumbing.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## SUSSEX.

## PUBLIC BUILDING.

Additional heating surface was supplied and repairs made to lock boxes, woodwork and fittings.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## TRACADIE.

## LAZARETTO.

A porch was built at rear entrance; a new hardwood floor was laid in basement passage; the alley was asphalted; the verandahs were repaired and some repairs and improvements were made to door, woodwork and plaster.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

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## PROVINCE OF PRINCE EDWARD ISLAND.

## CHARLOTTETOWN.

## QUARANTINE STATION, WESTPORT.

An addition for kitchen and pantry was made to steward's residence.

## GEORGETOWN.

## PUBLIC BUILDING.

On October 20, 1908, a contract was entered into for the alteration of a building on a plot purchased, situated on the corner of Kent and Richmond streets. It is a two-story and attic brick building on a stone basement, with wooden floors, partitions, stairs and roof, measuring on plan, 62 feet by 69 feet.

Plans and specification for a hot water heating apparatus are prepared.

The basement is for heating apparatus; the ground floor for the post office and examining warehouse, and the first floor for the customs long room, postal store and lavatory.

Plans and specification prepared by this department.

Clerk of works, M. D. McPhee.

Contractor, B. D. Humphrey.

## MONTAGUE.

## PUBLIC BUILDING.

The front steps were removed and replaced by new and better ones; a balustrade was erected; some fencing was done; a wicket was placed in lobby screen; some additional heating surface was supplied and the woodwork improved.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## SOURIS.

## PUBLIC BUILDING.

The floor was trussed to enable it to properly support weight of large safe and some other improvements in flooring were made.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

## SUMMERSIDE.

## PUBLIC BUILDING.

A plumbing system was put in, the soil pipe connected with the town sewer and the water supply with the town main.

Concrete sidewalks with curb and gutter were laid along front and side of property; the stone steps and stone piers were improved and the rear verandah repaired.

Work done, under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.



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**PROVINCE OF QUEBEC.****COOKSHIRE.****PUBLIC BUILDING.**

On October 3rd, 1908, a contract was entered into for the construction of this building on a plot of ground having a frontage of 100 feet on Main street by a depth of 125 feet.

There are to be two stories of brick on a stone-faced concrete basement, divided into a main portion 38 feet by 29 feet and an adjunct 21 feet by 23 feet in rear. The partitions, floors, stairs and roof are of wood excepting in the basement where the floor is of concrete and the partitions of brick.

The basement is divided into boiler room, fuel room and W.C.'s; the ground floor of the main portion is the post office and, of the adjunct, the examining warehouse, weights and measures and W.C.; the first floor of the main portion is the Customs and Inland Revenue offices, and that of the adjunct, quarters and bath room for caretaker.

Plans and specification prepared by this department.

Resident architect, J. W. Grégoire.

Contractors, Simoneau & Dion.

**GROSSE ILE.****QUARANTINE STATION.**

A new frame to the tanks at the western division was erected and painted; a filter was placed on the supply pipe of these tanks and inclosed in a wooden building, shingled and painted; the medical superintendent's residence had a new floor to verandah, blinds repaired and painted, new brick wall to dairy; laundry sheeted with wood inside and out and painted; a new coal bin made; at the assistant superintendent's residence a cellar was excavated, the house raised, a well excavated and covered, a door and frame put in; the electricians residence had the interior renovated, painted and papered; Rev. Riopel's residence had a well excavated; the carter's residence had a stable with hayloft, a hen house and a shed erected and painted, and 20 screens provided; the upstairs kitchen had two w.c.'s installed and inclosed; the boiler room was sheeted with T. & G. boards; the large hospital at the eastern division had the store refloored and outside blinds repaired; the ice house was renewed and painted outside; one stable was repaired and painted; the roofing of nine large sheds were coal tarred and the sides whitewashed, and twenty-five acres of fencing were repaired and coal tarred.

**STEWARD'S HOUSE.**

A building 32 feet by 31 feet 6 inches, with a kitchen 12 feet by 12 feet of wood, the inside plastered in selenite, was erected and painted.

**LAUNDRY, EASTERN DIVISION.**

An addition 18 feet by 24 feet of wood brick-veneered, roof covered in galvanized iron, floored with cement, lined with wood was built and fitted up partly as a coal bin, furnished with cupboard, work bench, &c.

All the foregoing works carried out under the supervision of Ph. Béland, clerk of works, Quebec.

**JOLIETTE.****ARMOURY BUILDING.**

On February 12, 1909, a contract was entered into for the construction of this building, on a plot situated on the south side of Park street opposite the public park,

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having a frontage of 100 feet by a depth of 150 feet. Owing to a temporary difficulty concerning the conveyance of the site, the work was not commenced at the close of the fiscal year.

It is a two story brick building with stone dressings on a stone basement, having a frontage of 55 feet 8 inches by a depth of 46 feet 6 inches. The partitions, excepting a small number on ground and first floors, which are wood, are brick and the floors, stairs and roof, excepting the basement floor which is concrete, are of wood, the roof covered with tar and gravel. A part of the basement is unexcavated; the excavated portion contains a furnace room, a fuel room and a shooting alley room 27 feet by 15 feet. On the ground floor are two armouries, one regimental C.O. room, two company C.O. rooms, one adjutant's room, one quartermaster's stores room, a lavatory, a vestibule and a hall. The first floor has a lecture room, an officers' mess room and a sergeants' mess room.

Plans and specifications prepared by this department.

Contractors, Simoneau and Dion.

### LACHUTE.

#### PUBLIC BUILDING.

This building, which was described in a previous report, is completed, wired for electric light, furnished with a hot water heating system as also office fittings and furniture.

### MAGOG.

#### PUBLIC BUILDING.

A contract for the construction of this building, which was described in my report of last year, was entered into on May 27, 1908, and the building is nearing completion. Hot water heating and electric lighting are being installed, as also the office fittings and furniture.

Plans and specification prepared by this department.

Clerk of works, A. J. Whitehead.

Contractor for construction of building, R. Cameron.

Contractor for wiring, P. E. Marchaud & Co.

Contractor for heating, Albert Beauchene.

### MONTREAL.

#### POSTAL STATION 'D,' POINT ST. CHARLES.

A contract for the erection of this building on the north side of Centre street, Point St. Charles, with a frontage of 62 feet 6 inches by a depth of 84 feet 5 inches, was entered into on December 2, 1908. The front portion to a depth of 36 feet 7 inches has two stories and basement, and the remaining 47 feet 10 inches has one story and basement. The walls of the basement are stone and the remaining walls brick; the Centre street front is faced with stone and the windows on the flanks of the two-story portion have stone dressings. The front cornice is of stone but that on the flanks is sheet metal. The basement and ground floor partitions and vaults are of brick and the basement floor of concrete, but the remaining partitions and floors and the stairways and roofs are of fireproof construction, the roofs covered with tar and gravel. The basement is for heating apparatus, fuel rooms, storage, &c.; the ground floor is entirely devoted to post office purposes, and the first floor to living apartments.

Plans and specification prepared by this department.

Superintendent architect, Alfred Piché.

Contractors, Messrs. Morssen & Co.

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## GENERAL POST OFFICE, ADDITION.

This work, which was described in my last report, has been in steady progress since, and is expected to be completed early in the next fiscal year. Hot water heating and electric lighting are being installed.

## GENERAL POST OFFICE, ST. JAMES STREET.

The sidewalks were renovated in concrete and cement; a mezzanine floor was constructed in basement.

Rubbers on the three swing doors and on stamping tables were renewed; alterations were made to lighting system and several additional lights put in.

The heating system and plumbing have undergone minor renewals and repairs.

Furniture provided, such as tables, pigeon-holes, desks and chairs. Roof fixed and several lengths of fall pipe renewed; all under the supervision of C. Desjardins, clerk of works, Montreal, P.Q.

## ST. HENRI.

## POST OFFICE.

One 'Emond' filter was installed; various repairs were effected to plumbing; two sections of furnace were renewed; new firegrates provided and fixed, and the roof covering was put in good condition.

Ceilings and walls in post office and caretaker's quarters were cleaned, repaired and kalsomined; walls previously papered were repapered; the woodwork, windows, doors, &c., cleaned and painted; the bath room was repaired, and a new enamelled cast-iron bath, with a combined cold and hot water tap complete.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

## SAINT LOUIS DU MILE END.

## POST OFFICE.

In order to enlarge letter carriers' office, alterations were effected to interior of building, such as taking down plastered partitions and changing position of glazed divisions and letter boxes.

All walls of post office and caretaker's quarters were cleaned, repaired and kalsomined. Roof, woodwork, &c., painted; rubber weather strips put on all openings to protect from cold.

A w.c. bowl was renewed; waste pipes which were stopped were put in good order; a new 'Emond' filter was installed; improvements to electric light system were effected and new lights added.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

## POSTAL STATION 'B.'

An iron railing was erected around roof to prevent snow or ice from falling on skylight; new electric light fixtures were installed and several additional lights put in, and repairs and renewals were made to plumbing.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

## POSTAL STATION "C."

The interior of building was cleaned; the walls and ceilings repaired and kalsomined; the woodwork cleaned and painted; a new installation of lamps, fixtures,

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shades, &c., was fitted to electric light system, also repairs to gas lights; chimneys and chimney mantels, &c., were provided and fixed, and the plumbing was repaired.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

## HOCHELAGA.

### POST OFFICE.

Minor repairs were effected to the building; the heating and plumbing were repaired; a section of furnace was renewed; an electric light system installed and a new tap put in.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

### EXAMINING WAREHOUSE.

The roof has undergone various repairs; the plumbing was maintained in good order; pipes damaged were renewed, and two radiators were installed.

Owing to an explosion in the port, windows and glass had to be repaired and renewed.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

### INLAND REVENUE.

The roofing and fall pipes were kept in order, as well as the plumbing, one basin and three taps were renewed; the heating apparatus was maintained in order and two radiators replaced by new ones. Various repairs were effected to gas lights and there were renewals of pipes and gas fixtures.

### EXPRESS BUILDING, D'YOUVILLE PLACE.

Various alterations were effected to the interior of this building, such as old plastered partitions taken down and done over with batten boarding; walls and ceilings sheathed; new hardwood counters and glazed partitions, wickets, &c., constructed. A large number of shelves and pigeon-holes were constructed and a new toilet room with cement walls and ceiling, also a hardwood floor, four W.C's, three urinals and a lavatory with all necessary conduit and waste pipes, taps, &c., complete.

All openings, doors and windows were repaired, as well as a number of broken lights reglazed; all interior openings and all woodwork were painted two coats; the hardwood counters were stained and varnished and the galvanized iron on roof repaired.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

### CUSTOMS HOUSE.

After the explosion, which took place in the port, broken windows were repaired and new glass put in; alterations of long room were made, a new glazed division was fixed on large counter; the automatic parcel carriers had to undergo repairing; wire grilles were fixed for cashiers' offices, a new mezzanine room was constructed above long room, with hardwood floor and glazed inclosure and stairs; a small hoist for parcels and stationery was erected; a lavatory, tap, waste pipe, &c., were also installed; the counter in 'Landing' was made wider and a new glazed division fixed on it with brass grilles to wickets and the interior of this room was repaired and painted throughout; repairing was done in long room, record and other rooms, skylights, first and second floor, stairs, &c. All walls of the above named rooms were put in good repair and kalsomined. All interior openings and all painted woodwork were painted over and hardwood work and stairs re-varnished.

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Repairs were also done to heating system and two new radiators added, plumbing was also overhauled, two broken basins replaced by new ones, drain in cellar cleaned out and repaired.

Roofing was made good and new glass put in skylight, also gutters made.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

## PLESSISVILLE.

## PUBLIC BUILDING.

On December 11, 1908, a contract was entered into for the construction of this building on a site having a frontage on St. Calixte street of 50 feet by a depth of 100 feet along St. Edouard street. The building has a frontage of 40 feet 4 inches on St. Calixte street by a depth of 50 feet 4 inches; it has two stories of brick, with stone dressings, on a stone basement and surmounted by a wooden mansard attic. Excepting in the basement, where the floor is concrete and the partitions brick, the floors, partitions, stairs and roof are of wood, the roof covered with metal. The basement contains furnace room, fuel room, examining warehouse and storage; on the ground floor are the post office, customs offices, inland revenue office and lavatory; on the first floor are living apartments, and in the attic is an armoury.

Plans and specification prepared by this department.

Clerk of works, Alfred Mathieu.

Contractors, Paquet & Godbout.

## QUEBEC.

## HIS EXCELLENCY'S QUARTERS, CITADEL.

All drains were opened up and all their connections with fixtures throughout house tested and made good; three new soil pipes were put in as well as three breathing pipes. The original brick and tile drain below supper room floor was removed and replaced by an 8-inch cast iron pipe trapped and connected with main drain on south side of quarters and all the drains along north side and that from prison building and all the surface gullies were properly connected with the 8-inch pipe. A 6-inch branch drain was laid under supper room and a 4-inch drain under basement floor.

There were two lead-lined sinks with all connections and supply pipes renewed; one new sink supplied, fitted up and connected and one sink changed in position. In addition to the closets and accommodation for servants mentioned in my report of last year, a new bath room and lavatory was fitted up in the first floor for the use of H.R.H. A hot water heater was installed in basement and hot water service extended to all the baths, basins and sinks throughout the building. A new porch was built at supper room entrance and another at main entrance, the latter having before it a canvas canopy on a frame and posts of iron pipe. The covering of latrine pit under supper room was removed and replaced by reinforced concrete, a new floor then built over all. A bower of cedar poles covered with canvas was built at entrance to garden; two gangways were built as means of access to the garage. A new harness room, a temporary carriage house and two large platforms for washing carriages and autos were built. New floors in mangers as well as extensive repairs were made in stables. In the house, seventy-two carpenter's rim locks were removed and replaced by mortice locks; five new sashes were put in to replace others; a stairway was taken down and rebuilt elsewhere; the beams and posts in supper room were cased; a part of basement was partitioned off to form wine cellar; seven new venetian blinds and frames were put in; the terrace platform was refloored; eight wardrobes were built; some wainscotting was done; plank borders and stone coping were put in garden, as also a brick in cement tank for water plants and 220 feet lineal

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of boxing for plants on top of wall. Galvanized iron pipes with taps for watering plants was laid along area wall and a quantity of sodding was done in front of house. A large number of floors were repaired and a number renewed; the billiard room was divided into four temporary bedrooms; a temporary shelter for signal officer was built on roof of new addition; new duck curtains were provided for walls of tent room, and eighteen cornice boards and brackets for curtains were fitted in principal rooms. Electric bells were installed in all rooms on ground and first floors, and all rooms throughout had additional electric light wiring, new lights, &c.

Of cleaning and tinting there were 2,552 yards, of two and three-coat painting 3,875 yards, and of papering, 564 rolls. A large quantity of furniture was supplied, consisting of fancy and drawing room tables, writing tables, low boys, high boys, chests of drawers, bureaux, dressing tables, bedsteads, mattresses, mirrors, sofas, chairs, &c., together with carpets for eight principal rooms, new curtains for rooms of ground and first floor, loose covers for sofas and chairs, range, two refrigerators, a number of kitchen and garden utensils, crockery, glassware and napery. General and thorough repairs were made in carpentry, plastering, painting, cabinet work, &c., &c.

Work done under the superintendence of Wm. Hutcheson, Superintendent, Government House, Ottawa.

#### DRILL HALL, SCHOOL OF GUNNERY.

A contract for the construction of this building was entered into on November 26, 1908. It is situated in Diamond Ditch, with the long axis parallel to and 21 feet from the scarp wall, and measures 168 feet 4 inches in length by 86 feet in breadth, all of which excepting 16 feet of the length at end opposite the entrance, which is occupied by a gallery having two rooms and gallery under, is a drill hall. There is a main entrance in the middle of the end wall next Diamond Bastion and an entrance by an inclosed and covered passageway from the sally port. The walls are of stone, brick-lined, the floor of wood blocks on concrete, the partition walls brick and the gallery and roof wood, the latter supported on iron trusses.

Plans and specification prepared by this department.

Superintending architect, Emile Tanguay.

Contractors, Dumais and Lachance.

#### POST OFFICE.

Some new offices and a new toilet room were fitted up; the roof was painted and some furniture was supplied; all under the supervision of Ph. Béland, clerk of works, Quebec.

#### CUSTOM HOUSE.

A carpenter and cabinetmaker was employed to keep the building fittings and furniture in repair; some radiators and some gas lights were installed and some linoleum was supplied and laid. All under the supervision of Ph. Béland, clerk of works, Quebec.

#### EXAMINING WAREHOUSE.

Some electric bells were installed, and repairs were effected to boilers and foot-paths; under the supervision of Ph. Béland, clerk of works, Quebec.

#### IMMIGRATION BUILDING.

The roof of the shed for United States immigrants was covered with galvanized iron and the roofs, generally, repaired; a bath and w.c. were put in and hose and furniture supplied. All under the supervision of Ph. Béland, clerk of works, Quebec.

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## CULLERS' OFFICE.

Some plumbing was done, some furniture repaired and tools supplied. All under the supervision of Ph. Béland, clerk of works, Quebec.

## IMMIGRATION HOSPITAL.

An ice-house was erected; stoves were repaired and hardware and furniture supplied. All under the supervision of Ph. Béland, clerk of works, Quebec.

## QUEBEC EAST (ST. ROCHS).

## POST OFFICE BUILDING.

On February 6, 1909, a contract was entered into for the construction of this building, situated at the intersection of St. Joseph and Dorchester streets, measuring on plan about 49 feet by 48 feet, of three stories and basement, the walls of brick, faced with cut stone on street fronts and with stone dressings on the remainder, Deschambault limestone for the ground floor and Miramichi sandstone for the first and second floors; the street fronts crowned with a cut stone cornice and balustrade, and the remaining walls with a brick parapet and cut stone coping. The floor of the basement of concrete and of the other floors concrete and iron; the basement partitions to be brick and those above are iron and concrete covered with wood.

The basement is intended for heating apparatus, fuel storage and stores; the ground floor for the post office, and the upper floor for living apartments.

Plans and specifications prepared by this department.

Superintendent architect, René P. Lemay.

Contractors, Messrs. Jinchereau & Lamonde.

## ST. JOHN'S.

## POST OFFICE.

This building, which was described in a previous report, is completed and occupied.

## CAVALRY STABLES.

This building, which was described in a previous report, is completed and occupied.

## SHERBROOKE.

## DRILL HALL.

This building, which was described in my report of last year, is still in progress of erection; contracts were entered into for heating and electric light wiring.

Plans, &c., prepared by this department.

Resident superintendent, J. W. Grégoire, architect.

Contractors for construction of building and for heating, Messrs. Simoneau & Dion.

Contractor for electric wiring, A. E. Choquette.

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## PROVINCE OF ONTARIO.

## BARRIE.

## PUBLIC BUILDING.

A canopy was built over the north-west doorway as a protection against snow slides from the roof.

Work supervised by Thos. H. Hastings, clerk of works, Toronto, Ont.

## BELLEVILLE.

## PUBLIC BUILDING.

A part of the cement sidewalk was relaid, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## DRILL HALL.

This building which was described in my report of last year was completed, fitted up with electric lighting, hot water heating, armoury and office fittings and furniture.

## BERLIN.

## PUBLIC BUILDING.

A tower clock having four dials was installed in the tower, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## BOWMANVILLE.

## PUBLIC BUILDING.

A fire escape was erected, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## BRAMPTON.

## PUBLIC BUILDING.

A new door frame was put in for entrance to fire escape and a new flag pole erected to replace that destroyed by lightning.

## BRANTFORD.

## PUBLIC BUILDING.

New pavement with stone curb on George street and with stone curb and sewer on Dalhousie street were put in. Some furniture was supplied the Custom House and some window shades and a clock to the Indian office; the street letter boxes were painted, all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## DRILL HALL.

New pavement with concrete curb and stone sewer was built on Bridge street and some furniture was supplied, all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.



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## BROCKVILLE.

## PUBLIC BUILDING.

A fire escape was erected, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## CHATHAM.

## PUBLIC BUILDING.

King street, in front of building, was paved, new electric light wiring and fixtures were installed, new maple floor was laid in lobby, new tile floor in public lobby and the porches were painted, all under the supervision of Thos. H. Hastings, clerk of Works, Toronto, Ont.

## DRILL HALL.

Cement sidewalk was laid; shower baths and ventilator were installed and some furniture supplied. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## CLINTON.

## POST OFFICE BUILDING.

A septic tank was put in and some general repairs effected. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## COBOURG.

## PUBLIC BUILDING.

A fire escape was fitted to the building and some rearrangement of heating coils done. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## DESERONTO.

## PUBLIC BUILDING.

A fire escape was fitted to the building, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## DURHAM.

## ARMOURY.

On October 2, 1908, a contract was entered into for the erection of this building on a plot of ground having a frontage of 50 feet on the eastern side of Garafraxa street by 100 feet in depth along a proposed new street on the north side. The building is to have two stories in brick on a stone basement and is to measure on plan 35 feet 10 inches in frontage by 32 feet 4 inches in depth. In basement, the partitions are of brick and the floor of cement, but above, the partitions are of studding and plaster and the floors, stairs and roof of wood. In the basement are furnace room, fuel room, stairway hall and storerooms; on the ground floor are a company armoury, a cadet corps room, a Q.M. store and a stairway hall, while on the first floor are a lecture room, a band room, a company C.O. room and a stairway landing. The building is heated by a hot air system.

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There is a one-story detached latrine building of wood on concrete foundation walls and with a concrete privy pit, measuring on plan 10 feet 2 inches by 12 feet 4 inches.

Plans and specification prepared by this department.

Clerk of works, James Lenahan.

Contractor, Hugh McDonald.

## FORT WILLIAM.

### PUBLIC BUILDING.

The step at the entrance was replaced and an electric ventilating fan was installed, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## GALT.

### PUBLIC BUILDING.

A retaining wall was built along the river front and some furniture supplied. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## GODERICH.

### PUBLIC BUILDING.

An electric burglar alarm was installed and some repairs made to the building. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## GLENCOE.

### PUBLIC AND ARMOURY BUILDING.

On September 11, 1908, a contract was entered into for the construction of this building on a plot of ground having frontage of 100 feet on Main street by a depth of 165 feet 9 inches on Symes street. It consists of a main portion 29 feet by 32 feet having two stories, attic and basement, and a one-story adjunct 26 feet by 39 feet. At an angle of the main front is a clock tower four stories and basement. The external walls are brick with stone dressings and on a stone basement, the attic of wood covered with metal; the floor of the basement is concrete and the basement partitions are brick but the remaining partitions and floors, and the stairs and roofs as well, are of wood. In the main portion are a basement for heating apparatus and fuel, a ground floor for the post office, a first floor for customs and inland revenue offices and an attic for caretaker's apartments; in the adjunct is one floor for examining warehouse, armoury, C.O. office lavatory and inland revenue office.

Clerk of works, J. E. Hull.

Plans and specification prepared by this department.

Contractor, Geo. A. Proctor.

## HAMILTON.

### DRILL HALL.

This building, which was described in a previous report, is completed, fitted up with a steam heating apparatus, electric lighting, office and armoury fittings, &c., ready for occupation.

### PUBLIC BUILDING.

The electric lighting system was rewired; new lavatories were installed; the postmaster's office was papered and painted; a number of rooms in the custom house

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were decorated; some storm sashes, window shades and wire guards were supplied and general, usual and ordinary repairs effected, all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## KINCARDINE.

## PUBLIC BUILDING.

This building which was described in my report of last year is nearing completion. A hot water heating system and a system of electric light wiring are installed.

## KINGSTON.

## ROYAL MILITARY COLLEGE.

*Servants New Quarters.*

This building, which was described in my report of last year, is nearing completion. A hot water system of heating is being installed in each block.

*Barrack accommodation for Stables.*

On January 27, 1909, a contract for the construction of this building in the outer inclosure, near the stables and facing the Barriefield road, was entered into. The building is to accommodate the N.C. officers and men of the permanent staff attending the stables.

It is a two story brick building on a stone basement and with a wooden attic, measuring 49 feet by 45 feet external dimensions; the lining of the basement walls and the basement partitions are brick, the remaining partitions of stud and plaster; the floors, roof and stairs, excepting the basement floor which is concrete, are of wood, the roof covered with sheet metal.

The basement contains a furnace room, laundry and storerooms; the ground floor, mess rooms, kitchen and lavatories and the two upper floors sleeping rooms.

Plans and specification prepared by this department.

Resident architect, H. B. Smith.

Contractor, M. Sullivan.

## LEAMINGTON.

## PUBLIC BUILDING.

On December 7, 1908, a contract was entered into for the construction of this building on an irregular plot of ground bounded on three sides by Talbot, Fox and Mill streets and on the fourth by adjoining private property. It is a brick building with stone dressings and on a stone basement consisting of a main portion of two stories measuring 52 feet by 38 feet on plan and a one-story adjunct measuring 32 feet by 15 feet excepting that in the basement, the partitions are brick and the floor cement, the floors, partitions, stairs and roof are wooden. There is a brick safe room on the ground floor.

The ground floor of main portion is the post office and that of the adjunct the postmaster's offices and examining warehouse; in the first floor front are the custom's offices and in the rear the caretaker's rooms, the W.C's, lavatory, bath rooms, &c. Drainage is to a cesspool in the rear of the property.

Plans and specification prepared by this department.

Clerk of works, Samuel O. Roach.

Contractors, W. J. Leslie & W. A. Mitchell.

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## LONDON.

## CUSTOM HOUSE.

The exterior of the building was painted; some new awnings were supplied and an office in the inland revenue fitted up. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## MILITARY STORES BUILDING.

The building was wired for electric lighting; two Browning tanks, grates and furnaces were supplied, and some minor repairs effected. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## POST OFFICE.

An asphalt pavement was laid on the roadway of Queen's avenue and Richmond streets along the post office property and on Dundas street along the drill hall property; alterations were made to plumbing, the street letter boxes were repainted and the bag rack was rebuilt. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## MARKHAM.

## PUBLIC BUILDING.

This building, which was described in last year's report, is practically completed and is being fitted up with a hot water heating system, office fittings and furniture.

## NAPANEE.

## PUBLIC BUILDING.

Some furniture was supplied to the post office, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## NIAGARA FALLS.

## PUBLIC BUILDING.

Some minor usual and ordinary repairs were effected, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## NORTH BAY.

## PUBLIC BUILDING.

Metal lockers were supplied to the armoury, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## OSHAWA.

## PUBLIC BUILDING.

A new inclosure fence was built; the drain was overhauled and the vestibule door altered; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

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## OTTAWA.

## ASTRONOMICAL OBSERVATORY, CENTRAL EXPERIMENTAL FARM.

There were supplied 94 large frames covered with duck; one hardwood floor was laid; 89 lineal feet of partition were erected and some carpets, awnings and office furniture were supplied.

## BIOLOGICAL LABORATORY, CENTRAL EXPERIMENTAL FARM.

A large quantity of partitioning, shelving and alterations was made and a quantity of furniture, carpets and window shades supplied, under the supervision of this department.

## CANADIAN BUILDING.

This is a rented building on Slater street. For the department of the Interior there were supplied and installed 264 drop lights with all necessary wiring, shades, switches, &c., two desk fans, three 4-light clusters, four 2-light clusters and the original lighting entirely rearranged. Call bells were equipped where necessary, 23 rooms were cleaned, retinted and painted, four tin door signs were supplied, as also 11 stepladders, 56 tables, four desks, 11 cupboards, six pairs trestles, 13 window poles, 11 window deflectors, six brackets, one map rack, nine chair cushions, 30 coat and hat strips, one baize door frame, one wooden bath, five door springs and an exceedingly large quantity of shelving. The Trent Valley Canal offices were supplied with furniture, the offices were altered to suit occupants and one room was picture moulded.

Work done under the supervision of this department.

John Shearer, superintendent.

## CUSTOM HOUSE.

The Customs was removed from 98 Wellington street to the ground and first floors of the Seybold building on the corner of Sparks and O'Connor streets. New office fittings were supplied for the long room and collectors office and the old long room fittings were re-used in the express office on the ground floor. New double doors were placed at the express entrance and a new window frame on the first floor. The ground and first floors were cleaned, tinted and painted.

Work done under the supervision of this department.

John Shearer, superintendent.

## EASTERN BLOCK.

The water closet room of the Privy Council and that of the Privy Council department were entirely renovated including the covering of floors, ceilings and walls. The offices of the Hon. the Secretary of State were refloored, cleaned, tinted, painted, supplied with entirely new plumbing and lighting fixtures and connections as well as new furniture, carpets, filing cases, &c. Throughout the corridors there were 230 yards lineal of burlap dado put on, painted two coats and had a wooden rail stained and varnished. There were 5,142 yards of washing and tinting of walls and ceilings in rooms and corridors. There were five rooms washed and tinted of which three were for the Secretary of State's Department and two for the Privy Council's department; eight hardwood floors were laid, two for the Privy Council Department and six for the Secretary of State's Department; six brass rods and curtains were supplied, one for the Finance Department, two for the Privy Council Department and three for the Secretary of State Department; wash basins were supplied and connected, five for the Auditor General's Department, one for the Indian Affairs Department, seven for the Justice Department and two for the Secretary of State Department; four

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rooms were moulded for picture hanging, three for the Finance Department and one for the Department of Indian Affairs; 11 tables were supplied, six for the Finance Department and five for the Indian Affairs Department; electric lighting fixtures were supplied to Finance, five 4-light clusters, two desk lamps, two shades and one meridian, to Indian Affairs; three desk lamps and three drop lights to Justice, seven desk lamps, three 3-light clusters and 10 drop lights, to Secretary of State; three desk lamps and three drop lights; seven screens were supplied, two to the Privy Council Department, three to the Finance Department and two to the Indian Affairs Department; there were supplied to the Finance Department 15 cupboards, two step-ladders, two boxes, two cushions, four picture frames; to the Indian Affairs, four name plates, one map rack, two desks, two pairs of trestles, three boxes and one cushion; to the Privy Council Department, one new skylight, one new window, three window deflectors, 12 newspaper files, one desk and one chest, and to the Secretary of State Department, one map rack, two comb and brush cabinets, 24 coat and hat hooks on strips and four cushions. The incinerator for destroying condemned bank notes was repaired, a number of chairs were re-upholstered and repairs were made to call bells, glazing, &c.

There were minor jobs such as lettering, painting, general repairs, &c. The double windows and summer blinds were taken off, stored, cleaned and put on periodically, and the roofs, footpaths and roads were kept free from snow during winter.

Work done under the supervision of this department.

John Shearer, jr., superintendent.

#### GEOLOGICAL MUSEUM, SUSSEX STREET.

Two rooms were picture moulded, the telephone and call bells were wired in the Mines branch, which was supplied with two gas stands and one table lamp. One room was cleaned, tinted and painted and 29 lights were glazed.

Work done under the supervision of this department.

John Shearer, superintendent.

#### GOVERNMENT HOUSE.

The shingling of roofs of laundry and log cabin at rink was renewed. Of sidewalk there was renewed 885 lineal feet of 2-inch plank walk, 3 feet 3 inches wide, on 6-inch square cedars, 305 lineal feet of 4-inch plank walk 4 feet wide and 37 lineal feet of 3-inch plank crossings 3 feet wide; 210 lineal feet of 6 feet rough board fence were removed to enlarge hot bed and bedding-out ground and, to replace which, as well as to fence along Bowling Green, 408 lineal feet of 6 feet T. & G. beaded board fence was built and painted, 653 lineal feet of 4 strip fence, 4 feet high was built to enlarge potato field and to replace some of the old fence; 41 lineal feet of 6 feet picket fence and a new gate 9 feet wide were rebuilt at the end of ice house; 275 lineal feet of three rail fence at back of garden hedge was replaced by a strip fence; 710 lineal feet of boundary picket fence was renewed and 409 lineal feet of low picket fence was removed from south-west side of road to cottage.

The pent house in tennis court was taken down, repaired, made good and painted. The temporary buffet and sitting out room, 82 feet by 41 feet, was put up on lawn on occasion of State ball, decorated and afterwards removed and stored for future use. New wrought and moulded posts were made for gateway of old avenue.

A shed 32 feet by 10 feet by 12 feet was built at greenhouse for storage of hot-bed sash, pots, tubs, &c., and a 30 feet lineal addition was made to small greenhouse and fitted up with tables, beds, heating pipes, &c. An oat bin was built for the stables, and for the house 18 table tops, 12 trays, two mirror stands, one seat stand, one table, two cases of shelving, a couch frame, a chest, a box for books, six cases for cloak rooms, two stepladders and new loose covers for sofas and chairs. For the greenhouses and gardens there were made shelving, 36 shade screens,

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64 tubs, 28 hot-bed and melon frames, 10 iron tying frames, 360 boxes for bulbs cuttings and cut flowers and packing cases for plants sent to Quebec; valves were placed at all coils in rose and carnation houses and under the propagating tables to regulate temperature, and the plumbing overhauled and repaired.

Repairs and renewals were made to shutters, furniture, ranges, stoves, smoke jack, heating apparatus, coils, circulations, baths, closets, sinks, electric lighting, electric bells, winter sash, blinds, mosquito screens, &c., a new Quebec heater was supplied as also a number of reflector lights as well as the temporary lighting of buffet and sitting-out room put up and removed. At the house, there were 2,783 yards of two and three coat painting, 655 yards cleaning and tinting, 153 yards staining and shellacing floors, 73 yards papering walls and ceilings, 15 yards bronzing coils and chairs, 22 yards enamelling foot baths, 45 yards cleaning and enamelling furniture, 750 yards frosting glass, conservatory walls, 750 yards five times lime washing conservatory roof, 105 yards japanning pipes and 31 days of painter polishing ball room floor, lettering and patching. There were 2,608 feet of glazing greenhouses, including renewals, and 405 feet of glass renewed in windows of house. A refrigerator, 35 yards of tapestry carpet and 16 yards cocoa matting were supplied for the coachman's and stableman's rooms. At the house, were supplied 49 hot water cans, two hearth rugs, six flags; a small quantity of velours, cretonne, sateen, turkey red cotton and silk for covers and curtains; vases, bowls, trays, pots, stands, goblets and other ornaments, 33 in all; of china, 26 side dishes, 476 plates, 30 bowls, 364 cups and saucers, 74 egg cups, 10 jugs, 9 tureens, 15 vegetable dishes, 24 saucers only and six covered muffin dishes; of stoneware, 28 side dishes, 100 plates, 10 tureens, 3 vegetable dishes, 25 pudding dishes and 30 jugs; of glassware, 40 dozen tumblers, 69 decanters, 18 glass jugs, 188 champagne glasses, 203 claret glasses and 24 fruit bowls; of utensils, 34 galvanized iron pails, 20 coal scuttles, 3 coal shovels, six pastry brushes and two pots; there were retinned 554 inches of copper.

At Rideau Cottage, one large chimney shaft was taken down to roof line and rebuilt in firebrick; two chimney caps were relaid; 150 yards of two-coat painting, 50 yards staining and shellacing floors, 10 yards bronzing and 205 yards cleaning and tinting were done; the chimneys were cleaned and all stoves, ranges and heating apparatus overhauled and made good; new carpet was supplied for one room and a stairway; a number of carpets were made over and all the carpets, rugs and mats were lifted, cleaned and relaid; cocoa matting was supplied for verandah steps, linoleum for vestibule, one door mat and six pairs lace curtains. There were also supplied two dozen hangers, five sash ventilators, two desks, two tables, five thermometers, one candlestick, 24 bobèches, 8 caraffes, 1 teapot, 3 bowls, 3 jugs, 20 cups and saucers, 12 soup plates, 1 muffin dish, 30 tumblers and wine glasses, one ice cream freezer, together with kitchen utensils consisting of pots, pans, tins, boilers, cans, brushes, kettles, plates, scuttles, saws, forks, knives, &c., &c., 140 in number.

The conservatories were kept in order, the hay was cut and housed, the lawns, drives, &c., rolled and otherwise tended. The ice-house was stored with ice. The roofs, paths, slides, rinks, &c., were cleared of snow by the departmental staff, by whom the grounds, lawns, gardens and plant-houses were maintained. The curling and skating rinks were flooded and tended and the toboggan slide was kept in order.

The usual periodic cleaning, packing and unpacking were done; arrangements for and attendance on entertainments were furnished, and the rinks, slides, &c., kept in order.

Work done under supervision of Wm. Hutcheson, superintendent.

## LABOUR DEPARTMENT, METCALFE STREET.

This is a rented building (the Molson Bank building). There were supplied, six 12-inch electric fans, two office tables, four Yale locks, two floor mats, one coal

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box, one door and 77 lineal feet of shelving. Three rooms were cleaned and repairs made to the furniture. All under the supervision of this department.

John Shearer, superintendent.

#### LANGVIN BLOCK.

On the top floor, an entire rearrangement of the electric lighting was made, resulting in the separate lighting of each desk. Herein throughout the different branches of the Interior Department 264 drop lights, nine desk lamps, four 2-light and three 4-light fixtures were supplied. The coils on top floor in registration branch of Interior Department were moved from the middle. In the basement, an incinerator for destroying cancelled postal notes was erected. 40 rooms were cleaned, tinted and painted, 14 in the Agriculture, three in the Post Office and 23 in the Interior; all the corridors throughout are in process of being cleaned, tinted and painted; four brass rods and curtains were supplied the Agriculture; 67 tables were supplied in the Agriculture, five in the Post Office and 56 in the Interior; nine pigeon-hole cases were supplied, six in the Agriculture and three in the Post Office; 28 cupboards were supplied, five in the Agriculture and 23 in the Interior; stepladders were supplied, eight in the Post Office and 11 in the Interior; 19 window deflectors and ventilators were supplied, two in the Agriculture, six in the Post Office and 11 in the Interior; office desks were supplied, two in Agriculture, seven in the Post Office and nine in the Interior; two doors were changed in position, the wall broken through and made good and the openings resulting built up; 319 chests, strong boxes and packing boxes were provided, nine in the Agriculture, 306 in the Post Office and four in the Interior; there were supplied to the Interior four tin signs, four screens, six stools, 30 strips with hat and coat hooks, one baize door, one wooden bath, five door springs, 13 window poles, five shutters and frames, one map rack, to the Post Office, two blackboards, three screens, 14 cabinets, six window poles, six straight edges, seven latch locks, 60 lineal feet of partition, 35 drop lights and three desk lamps, and, to the Agriculture, 24 feet shelving and numbers on 33 doors; 21 lights were glazed in the Interior, 14 lights in the Post Office and a number in the Agriculture.

General repairs and renewals were effected to the elevators, heating, lighting, water supply, plumbing, carpentry, plastering, furniture and fittings throughout.

Work done under the supervision of the department.

John Shearer, Superintendent.

#### MAJOR'S HILL PARK.

Eight hundred and thirty trees, shrubs and herbaceous plants were added to complete the shrubbery and 1,300 to cover bare spots on cliff. The mound at the rock garden near the lake, was sodded. The spring display of bulbs required 44,000 of them while the autumn display had 150 varieties (1,000) plants of chrysanthemum besides orchids, begonia, gloire de Dijon, &c., &c.

Work carried out under the supervision of the department.

John Shearer, superintendent.

#### MARINE STORES, SUSSEX STREET.

This is a rented building adjoining the museum annex. All the cupboards were numbered consecutively and a number of carpets and articles of furniture supplied.

John Shearer, superintendent.

#### OFFICES NO. 98 WELLINGTON (NAGLE BLOCK.)

This is a rented building. This building was formerly occupied by the Ottawa Customs, which now occupy the Seybold block corner of Sparks and O'Connor streets.



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The officers of the Marine Stores branch of the Marine and Fisheries Department were moved into the ground floor and the penitentiaries branch of the Justice Department into the upper floor.

All the offices of the Marine and Fisheries in this building were cleaned, tinted and painted, had the doors numbered and supplied with tin door plates and there were supplied nine cupboards, eight tables, four chests, three screens, six picture frames, nine files, one newspaper rack, three deflectors, three cabinets three cushions, six locks and 36 coat and hat hooks on strips; 25 lineal feet of partition was erected and repairs made to office furniture, doors, floors, &c.

A circular cast iron stairway was put in to afford access to the ground floor vault; two window frames and five new doors and frames were put in; 97 lineal feet of partition were erected, a tin uniform case and office furniture was supplied, repairs were made to original furniture, the offices were cleaned, tinted and painted and 13 lights reglazed.

Work done under the supervision of the department.

John Shearer, superintendent.

## PARLIAMENT BUILDINGS.

The addition to the west wing, referred to in previous reports, was practically completed before the opening of Parliament. The steam heating in the entire west wing was renewed as well as the bulk of the plumbing and lighting including fixtures as well as piping and connections, all of which was done by the departmental staff. The new offices were fitted up and furnished; room 16 had the ceiling renewed and the room painted, tinted and furnished with burlap dado. All the corridors and rooms of the old portion of the west wing were cleaned, tinted and painted or papered. The walls of the Commons Chamber were cleaned and touched up in oil. The lettering on the portraits in corridors was renewed. Alterations of the floor of the Senate Chamber were made to increase the seating capacity. To offices in the west wing were supplied, in addition to plumbing, heating, wiring, &c., and, exclusive of the furniture, fittings and carpets supplied to the new offices, five cupboards, 57 desks, two chests, 11 sets book shelves, 54 files, 11 stepladders, three cloth covered doors, 300 rollers, 13 brass rods with curtains, six table tops, 85 chairs and eight boxes.

In the Senate or east wing a large number of rooms were cleaned, tinted and painted, some additions were made to the heating, lighting, water and drainage services and repairs were made to furniture and fittings throughout. In the Library of Parliament a large quantity of shelving was added, some lighting fixtures were supplied and the books were cleaned by the vacuum process.

Work done under the supervision of the department.

John Shearer, superintendent.

## PARLIAMENT GROUNDS.

The use of the bay at the north end of Bank street and the Supreme Court building as a dump for ashes and street scrapings was discontinued and the area formed by the process of dumping was levelled with 330 loads of soil and sodded. Alterations necessitated by the addition to the west block were made in the driveway and in the adjoining terrace.

The stone fence wall along Wellington and Bank streets was pointed and the iron work painted. On the Lovers' Walk, a brick sewer was built, the stone walls on the east side were repaired, the lookout was removed and replaced by a new one, and all the stairs were repaired. A cement walk was built at West Block, the crossings and sidewalks throughout the grounds were repaired, trenches were made for

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the electric cables, 147 lights were reglazed in the government greenhouse and 18 signs in English and French were painted and set up. 49,000 bulbs were used in the spring display.

Work executed under the supervision of Jno. Shearer, Superintendent.

## POST OFFICE BUILDING.

The plinth course of the external wall was rechiselled and pointed, an addition was made to the mail entrance and a new letter drop put in. The elevator was painted. Observation galleries were erected on ground and first floor; water filters and window awnings as well as a number of carpets and articles of furniture were supplied, and some changes made in plumbing.

The street letter boxes were painted, 102 letter and 30 parcel boxes.

Work done under the supervision of the department.

J. Shearer, superintendent.

## PRINTING BUREAU.

The old boilers and the steam mains and branches in the boiler room were overhauled and repaired, the plumbing and electric wiring were in part renewed; a quantity of hose was supplied; the floor of the engine room was painted as also the woodwork, and the walls were tinted. The lavatory cupola was renewed in galvanized iron; a partition 55 feet in length was erected; a lattice platform was erected before the switchboard; there were supplied six window deflectors, nine ventilators, two desks, one work bench, two cupboards, two chair cushions, one chair, one rug, and linoleum to three office doors.

The motive power of the machinery was changed from steam power to electricity, involving the installation of a motor generator set of 75 kilowatts capacity, switchboards, transformers and 70 direct connected motors.

Work supervised by this department.

Jno. Shearer, superintendent.

## REPAIRING STREETS, &amp;C.

The planking in yard of the Museum, Sussex street, was removed and the area covered with ashes and sodded and a plank walk laid from George street to the yard. As the dump at north end of Bank is abandoned all the ashes and scrapings are drawn to Nepean Point.

Scraping, cleaning and general repairs were done to the various roadways, footpaths and streets, under the control of the department. Rubbish, scrapings and ashes were removed from the East Block, West Block, Langevin Block, Parliament Buildings, Workshops, Post Office, Printing Bureau, Museum, Archives building, Military Store building, the Mint, the several rented buildings and the various streets, and deposited at Nepean Point; the grass at Printing Bureau, about Cartier Square, Wellington street, two bridges, Survey office, Fisheries Museum, Archives building and Geological Museum was kept clipped, manure was drawn on and removed therefrom, and the ashes removed from the boiler houses and furnace rooms of the various buildings; the roadways, sidewalks, footpaths, roofs and yards were kept clean of snow and the footpaths sanded during the winter.

Work done by the departmental staff.

Superintendent, John Shearer.

## RAILWAY MAIL SERVICE.

The offices of this branch of the Post Office Department were moved into the third floor of the Seybold building, which is a rented building on the corner of Sparks and O'Connor streets. These offices were partitioned, cleaned, tinted, &c., as required.

Work done under the supervision of this department.

J. Shearer, superintendent.

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## ROYAL MINT.

The lighting of grounds was completed, the lead-covered cable placed in vitrified clay conduit and the lamps hung on cast-iron posts; a gas main was laid from the building to the gate house; some telephone and call bell wiring was done and two lamps supplied; new traps were supplied on the laboratory wastes, cement piers were built from basement floor up through ground floor to carry the scales; the entrance gates, lampposts, elevator cage, boilers, pipes, coal bins and window screens were painted.

Work done under the supervision of this department.

Jno. Shearer, superintendent.

## SUPREME COURT BUILDING.

A new chimney was built from basement up to and through roof, and new mantels and fireplaces were put in the offices of the chief justice and registrar, which offices were cleaned, tinted and painted; 16 lights were glazed; a gas stove was placed in the messengers' room, and there were installed four electric fans and one drop light.

Work done under the supervision of this department.

Jno. Shearer, superintendent.

## TRAFALGAR BUILDING, CORNER BANK AND QUEEN STREETS.

Offices were rented in this building for the Accountants' Branch of the Interior Department, the Civil Service Commission and the Annuities Branch of the Trade and Commerce. The five rooms assigned to the Civil Service Commission were tinted, the floors oiled, a burlap dado hung around one of the offices, wiring was done for a telephone and a call bell system, the doors were lettered and the offices were completely supplied with furniture, carpets, curtains, shelving, stepladders, &c., &c.

In the Interior offices, a complete system of call bells and two water filters and coolers were installed.

In the Trade and Commerce offices, the telephone and electric bells were wired and complete sets of office furniture and fittings, carpets, shades, &c., were supplied.

Work done under the supervision of this department.

Jno. Shearer, superintendent.

## WESTERN BLOCK.

Considerable masonry, placing steel beams, &c., were done in connection with the new lavatory for the Customs Department; cement bases were built to carry instruments in electrical laboratory and gas fittings and steam connections provided in standard laboratory. A brick partition with fireproof door was built in attic to form one side of the chief architect's plan room. The interior of the ground floor and mezzanine water closet rooms as well as all the fixtures, drain pipes and skylight were removed and replaced by new. The southwest end of the ground floor corridor, in the Trade and Commerce Department, was partitioned off for use as an office.

Throughout the corridors, the doors and frames were repainted and varnished as well as lettered where required; 230 lineal yards of burlap dado were hung, painted two coats and bordered by a wooden rail painted and varnished. 30 rooms were cleaned, tinted, painted and the floors oiled, three in the Customs, four in the Inland Revenue, 13 in the Marine and Fisheries, eight in the Public Works and two in the Railways and Canals; 50 new windows were renewed, three in the Customs, three in the Marine and Fisheries, 31 in the Public Works and 13 in the Railways and Canals; 31 hardwood floors were laid, nine in the Customs, three in the Marine and Fisheries, 13 in the Railways and Canals and six in the Public Works; 18 brass rods and curtains were supplied, four in the Customs, five in the Inland Revenue and nine in

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the Railways and Canals; 15 cupboards were supplied, one in the Customs, two in the Inland Revenue, seven in the Marine and Fisheries, one in the Mounted Police and four in the Railways and Canals; 26 cabinets were supplied, 14 in the Customs, four in the Inland Revenue, three in the Marine and Fisheries and five in the Railways and Canals; 20 tables were supplied, 12 in the Customs, three in the Railways and Canals, two in the Inland Revenue and eight in the Marine and Fisheries; 645 packing cases were supplied, 111 in the Customs and 534 in Public Works; boards with hat and coat hooks were supplied, three in Inland Revenue, 45 in Public Works and 56 in Railways and Canals; seven fire screens were supplied, two in Customs, three in Marine and Fisheries and two in Mounted Police; 16 stepladders were supplied, five in Marine and Fisheries, five in Public Works and six in Railways and Canals; chests were supplied, five in Marine and Fisheries, nine in Public Works and three in Railways and Canals; four rooms were picture moulded, three in Marine and Fisheries and one in Railways and Canals; 10 window deflectors were supplied, three in Marine and Fisheries, one in Inland Revenue and six in Public Works; 33 picture frames were supplied, 21 in Public Works, six in Marine and Fisheries and six in Railways and Canals; nine cushions were supplied, three in Marine and Fisheries and six in the Public Works; of electric lighting fixtures there were supplied to the Trade and Commerce five drop lights, to the Railways and Canals 16 drop lights and two desk lamps, to the Marine and Fisheries 39 drop lights and 11 desk lamps, to the Public Works one three-light cluster and one drop light, to the Inland Revenue, six lamps and 17 drop lights; three electric clock dials were supplied, one to the Inland Revenue, one to the Marine and Fisheries and one to the Railways and Canals; four washbasins were supplied, two to the Inland Revenue and two to the Railways and Canals; there were supplied to the Customs, three chimney caps and one blower; to the Inland Revenue two folding shelves, 13 brackets and one telephone box; to the Marine and Fisheries one newspaper rack, nine files, six locks and 25 lineal feet of partition; to the Public Works 18 trestles, seven straight edges, four ice boxes, four drawing boards, five pigeonhole cases, four winter sash, three footstools; to the Railway and Canals three bookcases, four cloth-covered doors, one door and frame, two desks, three door springs and two locks; 14 fans driven by electric motors were supplied, eight to the Marine and Fisheries and six to the Public Works; lights were glazed, 23 in Marine and Fisheries, 168 in Public Works and 261 in Railways and Canals.

There were also repairs to a large number of articles of furniture, as also minor jobs of painting, lettering and of joinery. The roofs, roads and footpaths were kept free from snow. The winter sashes and summer blinds were cleaned, put on, taken off and stored periodically.

Work done under the supervision of this department.

Superintendent, John Shearer.

#### MILITIA BUILDING, SLATER STREET.

This is a rented building occupied by the Department of Militia and Defence. The electric lighting system was rearranged, the Deveau telephone system was removed and the call bell system overhauled. There were supplied three electric fans, nine desk lamps, 28 drop lights, 11 tables, six cabinets, five window poles, six window frames, seven cupboards, as well as 71 lineal feet of cupboard with sliding doors, two brass rods with curtains, two cushions, nine deflectors, one map rack, 45 hooks on strips, two clocks, four awnings and one radiator; nine rooms were cleaned, tinted and painted, four floors were cleaned and oiled, four desks were recovered in cloth, three door checks and three door stops were supplied, and repairs were effected to two clocks, 16 chairs as also to floors, doors, carpets, &c. There were supplied and installed three electric fans, nine desk lamps and 28 drop lights.

Work done under the supervision of this department.

John Shearer, superintendent.

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## WOOD'S BUILDING, 66 QUEEN STREET.

This is a rented building occupied by the Railway Commission. The bell service was completely rearranged and added to; additional offices were lighted; the rooms of the Assistant Chief Commissioner and those of Commissioner McLean were rearranged, new partitions erected, coils bronzed and floors oiled; the court and five other rooms were cleaned, tinted and made good.

The doors were lettered and had door checks, and there were supplied 14 packing cases, two chests, one cabinet, one notice board, five stepladders, 60 coat and hat hooks on strips, two brass rods with curtains, as well as furniture and fittings for new offices. Repairs were made to furniture, fittings, &c.

Work done under the supervision of the department.

John Shearer, superintendent.

## BUILDINGS AND GROUNDS GENERALLY.

In addition to the works mentioned in the foregoing, there are innumerable smaller works, i.e., there are items of repair done by the roofers, the masons, plumbers and other trades; items taking each a number of days' work of a tradesman, besides material to accomplish. Besides all these, in connection with the various other buildings, the property of the government, there are similar works of repair, painting, furnishing, tinting, &c., in connection with a number of rented buildings; also such works as repairs to and renewals of coal and other sheds, as well as works of a general character, such as the erection and taking down and storing of porches, winter boarding outside steps, &c., &c., all of which are done by the departmental staff.

## PARKHILL.

## PUBLIC BUILDING.

On December 7, 1903, a contract was entered into for the construction of this building on a plot of ground having a frontage of 50 feet on Main street by a depth of 150 feet along King street. The walls of this building are of brick with stone dressings and on stone basement walls; the floors, stairs, partitions and roofs are of wood, excepting that the basement floor is cement and the partitions brick; the slopes of roof and dormers are covered with sheet metal and the deck with tar and gravel. There is a main portion of two stories, basement and attic measuring 40 feet frontage by 31 feet depth and a one story and basement adjunct in rear 24 feet by 15 feet. In the basement of the main portion are the heating apparatus and fuel, and in that of the adjunct a toilet room; on the ground floor main portion is the post office and in the adjunct the examining warehouse; on the first front is the Customs offices and on the first floor rear the Inland Revenue offices, whilst the attic is arranged as apartments for the caretaker.

Plans and specification prepared by this department.

Clerk of works, James Phelan.

Contractors, W. J. Leslie and W. A. Macheill.

## PETERBOROUGH.

## DRILL HALL.

This building, which was described in my report of last year, is nearing completion, it is fitted up with a hot water heating system and electric light wiring.

## POST OFFICE

An electric fan was installed, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

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## PORT ARTHUR.

An addition to the post office was erected, wired for electric light and fitted up; some furniture was supplied to customs and the heating system repaired; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## SARNIA.

## PUBLIC BUILDING.

The stone work of the walls was pointed, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## SAINT CATHARINES.

## PUBLIC BUILDING.

The eavestrough and conductors were repaired; the interior of the building was cleaned, tinted and painted and a new clock was supplied to the customs; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## ST. MARY'S

## PUBLIC BUILDING.

Wrought iron canopies were put over the post office and customs entrances and a galvanized iron tank with force pump and pipes to supply soft water for domestic purposes was put in; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## SAULT STE. MARIE.

The walls and ceilings of the post office were painted, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## SIMCOE.

## PUBLIC BUILDING.

This building, which was described in last years' report, is nearly completed.

## STRATHROY.

## COMPANY ARMOURY.

This building, which was described in my report of last year, is nearly completed. It is wired for electric lighting, has a hot water heating system and a drainage system to a septic tank; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## STRATFORD

## POST OFFICE.

The interior of the building was painted and varnished and new furniture was supplied to the Customs; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

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## TORONTO.

## DRILL HALL.

This building, which was described in a previous report, is completed and fitted up.

## ASTRONOMICAL OBSERVATORY.

This building, which was described in my report of last year, is still in progress and will be completed early in the next fiscal year.

## CUSTOM HOUSE.

A large quantity of office furniture and of floor covering were supplied and some additional electric lights supplied, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## EXAMINING WAREHOUSE.

No. 1 elevator was rebuilt and new railway iron laid in roadway thereto; old floors were taken up and replaced by new; a new doorway was cut through Dominion Express Company to No. 3 elevator, the pent house was covered and iron work repaired; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

## MAGAZINE AT OLD FORT YORK.

On September 14, 1908, a contract was entered into for the construction of this building on the ordnance property, Old Fort, Toronto. It has brick walls and partitions on a concrete foundation, re-enforced concrete roof and a concrete floor covered with asphalt. A concrete footpath abuts the outside of the wall at every point. The building measures 69 feet in length by 22 feet in breadth and has an adjunct at both ends 10 feet long by 13 feet broad.

Plans and specification prepared by this department.

Work supervised by Thos. H. Hastings, clerk of works, Toronto.

Contractors, A. C. Baker and Anders Joodahl.

## POST OFFICE.

The additions and alterations described in last year's report were carried out, and in addition there have been installed new post office fittings, elevator, heating system, furniture, electric light, wiring and papering.

The street letter boxes were repainted.

Work supervised by Thos. H. Hastings, clerk of works, Toronto, Ont.

## WALKERTON.

## ARMOURY.

This building, which was described in last year's report, is completed and fitted up with hot water heating apparatus, furniture, &c.

## WELLAND.

## PUBLIC BUILDING.

On September 16, 1908, a contract was entered into for the construction of this building on an irregular shaped plot of ground fronting on Canal street, adjoining the northern boundary of the town hall site. There is a main portion measuring 56

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feet frontage by 65 feet in depth, the foremost 30 feet of which is three stories and basement and the remainder two stories and basement; in the rear, a one story adjunct, without basement, measuring 27 feet by 36 feet. The walls are of brick with stone dressings and are on stone basement walls, brick safe rooms on basement, ground floor and first floor; brick partitions on basement and ground floor, main portion and the remaining partitions, the floors stairway and roof, excepting the floor of basement which is concrete, of wood.

In the main portion, the basement is for heating apparatus; the ground floor is for the post office; the first floor is for Customs and Inland Revenue offices, post-master's office, postal customs office and lavatories, and the second floor for living apartments; in the adjunct are the examining warehouse, weights and measures office and lavatory.

Plans and specification prepared by this department.

Clerk of works, Edgar Rounds.

Contractors, Nagle and Mills.

### WHITBY.

#### PUBLIC BUILDING.

On October 16, 1908, a contract was entered into for the construction of this building on a plot of ground situated at the intersection of Dundas and Brock streets, having a frontage of 104 feet 3 inches on Dundas street by a depth of 67 feet 10 inches along Brock street. The building consists of a main portion 58 feet by 39 feet, two stories and basement of stone, brick-lined, surmounted by a wooden attic and having a four story tower at the street corner; in the rear of the main building is a one story and basement adjunct 15 feet 9 inches by 40 feet 9 inches. There are brick safe rooms and brick partitions on basement, ground floor and first main portion, but excepting the basement floor, which is concrete, all the floors, partitions, roofs and stairs are of wood, the slopes of roofs and the dormers covered with sheet metal, the deck roofs with tar and gravel.

The basement is for heating apparatus, fuel and stoves; the ground floor of the main portion is for the post office, of the adjunct for the examining warehouse, weights and measures and lavatories; on the first floor front is the custom offices and lavatories, in the rear the inland revenue offices and stairway, and in the attic, caretaker's apartments.

Plans and specification prepared by this department.

Clerk of works, W. H. Bradshaw.

Contractors, H. Gay & Sons.

### WINDSOR.

#### PUBLIC BUILDING.

The external surface of the stone foundation was cleaned, the letter chute repaired and the storm porch painted, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

### WOODSTOCK.

#### PUBLIC BUILDING.

The exterior and a portion of the interior of the building were painted; a fire escape was built to caretaker's quarters; changes and some new springs to doors and some electric lights altered.

Work done under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.



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## PROVINCE OF MANITOBA.

## BRANDON.

## ARMOURIES.

This building, which was described in last year's report, was completed, fitted up with a hot water heating apparatus and furnished for occupation.

## PUBLIC BUILDING.

Some filing sections and a number of articles of furniture were supplied the post office, and some repairs and renewals to offices and furniture of customs made under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

## DAUPHIN.

## POST OFFICE, LANDS OFFICE AND CUSTOMS OFFICE.

On August 20, 1908, a contract was entered into for the construction of this building on lot No. 16 and the most southeasterly and easterly 75 feet of No. 17, all in Block 9, Dauphin.

It is a two story brick building on a stone basement, surmounted by a wooden mansard, and measures 52 feet frontage by 50 feet depth. The basement floor is for the heating apparatus and fuel; three-quarters of the ground floor frontage by the depth is for the post office, the remainder occupied by a stairway in front and a customs office and examining warehouse in rear; on the first floor are the land offices and in the attic are two offices and the caretaker's apartments. There is a brick safe room on both ground and first floors; there are brick partitions in basement and cement floor in basement; the remaining partitions and floors as well as the stairway and roof are of wood, and the roof covered with sheet metal.

Plans and specification prepared by this department.

Clerk of works, W. Bessons.

Contractor, S. Brown.

## EMERSON.

## PUBLIC BUILDING.

On November 20, 1908, a contract was entered into for the construction of this building on a plot of ground situated at the intersection of Main and Dominion streets, with a frontage of 50 feet on Main street by a depth of 140 feet along Dominion street. The building is two stories, of brick, on a stone basement and consists of a main portion, having a frontage 43 feet by a depth of 37 feet 6 inches, and an adjunct in rear 29 feet 6 inches in breadth by 22 feet in depth.

The basement is for heating apparatus, fuel and stores; the ground floor, main portion, is for the post office and the adjunct for examining warehouse, weights and measures and brick safe room; on the first floor the main portion, front, is for the Customs, the rear for the Inland Revenue, bath room, cloak room and stairs, whilst in the adjunct are the caretaker's apartments.

Excepting the basement partitions which are brick and the basement floor which is concrete, the floors, stairs, partitions and roof are of wood.

Plans and specification prepared by this department.

Clerk of works, F. Smith.

Contractor, S. Brown.

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## NEEPAWA.

## PUBLIC BUILDING.

This building, which is expected to be completed at an early date, was described in my last year's report. A hot-water heating apparatus is in process of installation.

## PORTAGE LA PRAIRIE.

## PUBLIC BUILDING.

The Customs offices were extended, necessitating additional fittings and furniture. Work supervised by Jos. Greenfield, resident superintendent, Winnipeg, Man.

## SELKIRK.

## PUBLIC BUILDING.

This building, which was described in a previous report, is completed, fitted up with a steam heating apparatus, &c.

## WINNIPEG.

## FORT OSBORNE BARRACKS.

*Guard Room, Offices and Stores Building.*

This building, which was described in my last year's report, is completed, wired for lighting, fitted for hot-water heating and furnished with steel and other fittings, furniture, &c.

*Quarters for Married Men.*

This range of dwellings was described in last year's report. It is now completed, fitted up with hot-water heating, wiring for lighting, &c.

## NEW EXAMINING WAREHOUSE.

It is expected that this building, which was described in last year's report, will be completed at an early date.

## POSTAL STATION 'B.'

This building, described in last year's report, is completed, fitted with a hot-water heating apparatus, postal fittings, furniture, &c.

## IMMIGRATION BUILDING NO. 1.

A passenger elevator was installed; some fire extinguishers were supplied; two steel detention cages were erected in basement and iron beds were supplied to all sleeping rooms; all under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

## IMMIGRATION BUILDING NO. 2.

Fire escapes were erected; the entire building from attic to basement was cleaned and re-painted. The old partitions at east end were removed and replaced by galvanized iron with metal doors to rooms. Work supervised by Jos. Greenfield, resident superintendent, Winnipeg, Man.

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## PROVINCE OF SASKATCHEWAN.

## ESTEVAN.

## PUBLIC BUILDING.

On February 21, 1909, a contract was entered into for the construction of this building on a plot of ground having a frontage of 75 feet on 4th street by a depth of 120 feet on 13th avenue.

The building has a frontage of 44 feet six inches by a depth of 40 feet six inches exclusive of an adjunct in rear measuring 15 feet six inches by 16 feet six inches. There are two stories of brick on a stone basement and surmounted by a wooden mansard attic. Excepting in the basement, where the partitions are brick and the floor cement, the floors, roof and stairways are wood and the partitions of stud and plaster.

The basement is for the heating apparatus, fuel, stores, &c., and contains a small brick vault in the adjunct; on the ground floor are, in the main portion, the post office and examining warehouse and, in the adjunct, the weights and measures, a small vault for the post office as also a W.C. and lavatory room; on the first floor are the land offices, the entire adjunct on this floor forming one brick safe room, while the entire attic, excepting the men's W.C. and lavatory suite for the officials, is divided into caretaker's quarters.

Plans, &c., prepared by this department.

Clerk of works, G. F. Faulkner.

Contractors, Snyder Brothers.

## INDIAN HEAD.

## FORESTRY FARM.

The buildings were connected with the water pipe line. A seed drying house was erected.

Works supervised by W. S. Mollard, clerk of works, N.W.T., Regina.

## MAPLE CREEK.

## PUBLIC BUILDING.

This building, which was described in last year's report, was completed and fitted up with hot water heating apparatus, &c.

## REGINA.

## IMMIGRATION HALL.

Three new water closets and one urinal were installed, under the supervision of W. S. Mollard, clerk of works, N.W.T., Regina.

## PUBLIC BUILDING.

This building was completed, wired for lighting, fitted with hot water heating, post office fittings, furniture, &c., and is occupied.

Plans and specifications prepared by this department.

Works supervised by W. S. Mollard, clerk of works, N.W.T., Regina.

## SASKATOON.

## PUBLIC BUILDING.

This building, which was described in last year's report was completed, fitted up with hot water heating, &c.

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## YORKTON.

POST OFFICE, LANDS OFFICE AND CUSTOMS OFFICE.

On August 31, 1908, a contract was entered into for the construction of this building on a plot of ground consisting of lots Nos. 21 and 22 in block 3 of addition to town of Yorkton. It is a two-story building of brick, on a stone basement, surmounted by a wooden mansard and measures 52 feet frontage by 50 feet in depth.

The basement floor is for heating apparatus and fuel; three quarters of the ground floor frontage, by the depth, is for the post office, the remainder occupied by a stairway in front and a customs office and examining warehouse in rear; on the first floor are the land offices, and in the attic are two offices and the caretaker's apartment. There is a brick safe room on both ground and first floor; there are brick partitions and cement floor in basement, the remaining partitions and floors as well as the stairway and roof are of wood and the roof covered with sheet metal.

Plans and specification prepared by this department.

Clerk of works, J. W. Christie.

Contractor, S. Brown.

## PROVINCE OF ALBERTA.

## EDMONTON.

PUBLIC BUILDING.

This building, which was described in a previous report, is nearing completion.

## MEDICINE HAT.

ONE TROOP ARMOURY.

This building, which was described in last year's report, is completed, piped for natural gas, and fitted up with hot water heating and all necessary armoury fittings, furniture, &c.

## PROVINCE OF BRITISH COLUMBIA.

## CUMBERLAND.

PUBLIC BUILDING.

This building, which was described in my report of last year, is completed, wired for electric lighting and heated by hot water.

Plans and specification prepared by this department.

Clerk of works, James Stewart.

Contractor for the building, Edward Hunt.

Contractor for the wiring, Hayward & Hawkins.

Contractor for the heating, Edward Hunt.

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## FERNIE.

## PUBLIC BUILDING.

This building, which was previously described, was destroyed by fire on August 1, 1908, and is being reconstructed in accordance with original plans.

## LADYSMITH.

## PUBLIC BUILDING.

This building, which was described in last years' report, is completed, wired for electric lighting and heated by hot water.

## NANAIMO.

## PUBLIC BUILDING.

The retaining wall was taken down and rebuilt and a new telegraph office built, under the supervision of Wm. Henderson, resident architect, Victoria.

## NEW WESTMINSTER..

## PUBLIC BUILDING.

A new carpet was laid in the postmaster's office; a filing cabinet was supplied to Crown Timber office; the brick chimney shafts were cement plastered; changes and repairs were made to electric lighting and general repairs to lock boxes and drawers; all under the supervision of Wm. Henderson, resident architect, Victoria.

## ROSSLAND.

## PUBLIC BUILDING.

A canopy was constructed over mail entrance and the furnaces and heating coils were repaired, under the supervision of Wm. Henderson, resident architect, Victoria.

## DRILL HALL.

A channel to provide surface drainage was excavated at west wall below foundation and cemented, under the supervision of Wm. Henderson, resident architect, Victoria.

## VANCOUVER.

## NEW PUBLIC BUILDING.

This building, which was described in a previous report, is completed; the hot water heating is completed and the electric light wiring is in progress. A contract for a striking, tower clock was entered into.

## ORIGINAL PUBLIC BUILDING.

A doorway and stairway were constructed to give access to basement from parcel room; an addition was made to stamp vendor's office; the main sewer was cleared, changes were made throughout the electric lighting system and the lavatories were cleaned, tinted and painted. Changes were made in the arrangement of the post office screen and there were supplied to the post office, one cupboard, pigeon-hole cases, two desks and five stools; to the Customs, six pigeon-hole cases; to the Inland Revenue,

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one chair and one desk, and to the steamboat inspector's office, one cupboard and pigeon-hole cases; all under the supervision of Wm. Henderson, resident architect, Victoria.

## DETENTION HOSPITAL, CANADIAN PACIFIC RAILWAY WHARF.

A safe was supplied and the heating repaired; under the supervision of Wm. Henderson, resident architect, Victoria.

## VICTORIA.

## IMMIGRATION HOSPITAL.

This building, which was described in last year's report, is still in progress and is expected to be completed at an early date.

## MARINE BUILDING (OLD CUSTOM HOUSE).

The entire second floor (caretaker's apartments) was cleaned, papered, tinted, and a skylight was constructed; office chairs were supplied to steamboat inspector's office; the heating apparatus was repaired and the flag pole painted; all under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

## PUBLIC BUILDING.

On May 26, 1908, a contract was entered into for an addition to this building formed by inclosing the courtyard, two sides of which consist of the one story adjunct and one side consists of the end of main building, to form a workroom for the post office.

Plans, &c., prepared by this department.

Work supervised by Wm. Henderson, resident architect, Victoria, B.C.

Contractors, Drisdale and Maleolm.

## PUBLIC BUILDING.

*Repairs, Renewals, Furniture, &c.*

Alterations of the heating pipes were made to suit addition to building, some renewals were made to furnace parts and the floor covering of the public lobby of post office was taken up and replaced by mahogany flooring.

There were supplied to the post office, pigeon-hole cases, sorting cases and notice boards; to the Customs, clothes cupboards, pigeon-hole cases, roll-top desk, chairs, screen, money drawers and fittings and furnishings for express parcels office; for the Inland Revenue offices, a Shannon file case and two desks; for the savings bank, a steel cupboard for vault, steel cages for letters and some linoleum, and for the Public Works, a Shannon file case. A new window was made in corridor wall of appraiser's office and one in the corridor wall of the gauger's office; changes were made in the position of a sink; the long room counter was altered and some rooms were cleaned, tinted and painted in the Inland Revenue and savings bank.

Work done under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

## OLD POST OFFICE BUILDING.

The roof was overhauled, retarred and gravelled; under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

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## WILLIAMS HEAD.

## QUARANTINE STATION.

A sulphur di-oxide blast was supplied; a disinfecting tank was installed; additions were made to lighting plant; new steering gear was supplied to the steamer *Madge*; the disinfecting plant was repaired; the flagstaff and chimney shafts were painted; repairs were made to plumbing, and some lumber, sash, frames and hardware supplied. All under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

## YUKON TERRITORY.

## PUBLIC BUILDINGS.

General repairs and maintenance of the various public buildings throughout the territory was effected, under the supervision of S. A. Bertrand, superintendent of public buildings, Yukon Territory.

## LIST OF YUKON PUBLIC BUILDINGS.

Dawson, Administration building.  
Dawson, Government House.  
Dawson, Post Office.  
Dawson, Court House.  
Dawson, Government Warehouse.  
Duncan Creek, Mining Records Office (rented).  
Glacier Creek, Mining Records Office.  
Carcross, Mining Records Office (rented),  
Kluhane, Mining Record Office.  
Sulphur and Dominion, Mining and Inspector's Office (rented).





PART IV

CHIEF ENGINEER'S REPORT

ON

HARBOUR AND RIVER WORKS

INCLUSIVE OF

GRAVING DOCKS AND DREDGING OPERATIONS

ALSO

ROADS, BRIDGES AND SURVEYS THROUGHOUT THE DOMINION



## REPORT OF THE CHIEF ENGINEER.

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DEPARTMENT OF PUBLIC WORKS OF CANADA,  
CHIEF ENGINEER'S OFFICE,

OTTAWA, July 7, 1909.

NAPOLEON TESSIER, Esq.,  
Secretary,  
Department of Public Works.

SIR,—I have the honour to submit the annual report on the various works under my charge during the fiscal year ended March 31, 1909.

These works comprise the construction and repair of wharfs, piers, breakwaters, dams, weirs, bank and beach protection works; the improvement of harbours and rivers by dredging; the construction, maintenance and operation of government dredging plant; the construction and maintenance of graving docks; the construction, maintenance and working of slides and booms; the construction and maintenance of interprovincial bridges and approaches thereto, and of bridges on highways of federal importance in the Northwest Territories and the maintenance of military roads; also hydrographic and ordinary surveys and examinations, inclusive of precision levelling and geodetic measurements which are required for the preparation of plans, reports and estimates; the testing of cements, &c.

I have the honour to be, sir,  
Your obedient servant,

EUG. D. LAFLEUR,  
*Chief Engineer.*

### PROVINCE OF NOVA SCOTIA.

#### ABERCROMBIE POINT.

Abercrombie Point, Pictou county, is on the south side of Pictou harbour, between the entrances to the East and Middle rivers, and nearly opposite the town of Pictou.

A wharf, built by the harbour commissioners in 1889, and repaired by the department in 1891-2, has fallen into a dilapidated condition. It was originally a block and span structure, extending 466½ feet to 2 feet at extreme low water, on flats dry at extreme low water to within 167 feet of its outer end. It consists of an approach of brush and stone, 77 feet in length, and the remains of 13 crib-work blocks, of which two are in the T head.

Spring tides rise 6 feet; neaps rise 4 feet.

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The sum of \$3,000 was appropriated for expenditure in 1908-09 towards the reconstruction of the wharf, a work estimated to cost \$6,400.

A foreman was appointed and materials with the exception of the creosoted timber (which up to March 31, had not been delivered), were procured during the winter. Work of construction was commenced March 13, and continued up to March 31, when the total expenditure amounted to \$1,855.11. It consisted in reconstructing the four inner blocks from above low water.

## AMAGUADEES.

Amaguadees pond, Cape Breton county, is on the northern side of East bay, the eastern arm of the Great Bras d'Or lake, and is distant three miles from Benecadie point, at the entrance to the bay.

The sum of \$1,000 was appropriated for expenditure, during 1908-09, towards the extension of the wharf and, out of the amount voted, the sum of \$362.27 was expended in procuring the native timber, iron and ballast required for the proposed extension.

## AMHERST.

Amherst harbour is situated at the head of Chignecto bay, near the mouth of the La Planche river, about two and a half miles from Amherst town. The town of Amherst is probably the most important, prosperous and thriving industrial town in the province of Nova Scotia, and, as it is a manufacturing centre of some magnitude, it can readily be seen that efficient water transportation is essential to its future growth.

During the last fiscal year, out of the \$5,000 granted, the sum of \$4,950 has been expended. The work done consisted in repairing the sheathing, a portion of the covering and the driving of about eighty fender piles on the old pier; the construction of six dolphins on both sides of the circuitous entrance to the harbour; the completion of the covering on the new pier; the construction of a portion of a brush bed; the digging out of the old beds, and the supplying of 150 piles, for siding purposes.

Spring tides rise here 40 feet; neaps, 33 feet.

Work commenced June 20, and completed November 9, 1908.

## AMHERST POINT.

Amherst Point is a farming settlement, of some 400 people, situated about 3 miles south of Amherst town.

During the fiscal year of 1908-9, out of the amount granted, the sum of \$979.14 was expended, in the construction of a ferry slip. This ferry runs from Amherst Point wharf to Minudie wharf, and cuts off a drive of about 17 miles, for people wishing to go into Amherst.

The slip is 110 feet in length, 20 feet in width, 17 feet high at the inside end, and 5 feet high at the lower end. It is constructed on pile trestle bents.

Work was commenced here August 15, and completed October 10, 1908.

## AMIRO'S HILL.

Amiro's Hill, Yarmouth county, is a farming settlement of some 150 people, situated on the left or eastern bank of the Tusket river, about 4 miles below the village of Tusket.

For the convenience of the inhabitants in landing sea manure and supplies for local consumption, the department, during the fiscal year, built a small public wharf.

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It is constructed of dry rubble stone, and is 60 feet long, 40 feet wide and from 3 to 9 feet high. The work was begun September 8, and completed on December 7, 1908.

Spring tides rise about 11 feet.

Total expenditure, \$989.67.

## ANDERSON'S COVE.

Anderson's cove, Annapolis county, is a scarcely perceptible indentation in the coast line, on the south side of the Bay of Fundy, 16 miles east of Digby Gut, 2 miles east of Litchfield, and 2 miles west of Parker's cove. The settlement, which is called Hillsburn, comprises, within the radius of a mile, about 150 people dependent almost exclusively on the fisheries for a living.

In order to afford some small measure of protection and shelter for the boats, which are often broken or destroyed for lack of shelter, the department in 1905-6, expended the sum of \$1,813.29 in constructing a small breakwater 162 feet long, from 7 to 13 feet high and 26 feet wide.

In 1906-7, the sum of \$1,000 was expended in extending the breakwater by a substantial block of cribwork, 50 feet long, 26 feet wide, and from 12 to 15 feet high.

In 1908-9, the sum of \$3,033.57 was expended in extending the breakwater a further length of 100 feet.

The work was begun September 19, and closed down, though not completed, November 30, 1908. During the winter, the balance to the credit of the work at the end of November was expended in the purchase of timber for the completion of the top of the work.

Spring tides rise about 25 feet.

## ANNAPOLIS.

Annapolis, Annapolis county, is the oldest town in the province of Nova Scotia, having been founded in 1605. It is beautifully situated at the head of Annapolis basin and on the south side of the Annapolis river. It has a population of about 2,000 and is the centre of one of the most fertile districts in Nova Scotia.

In 1907-8, the sum of \$12,942.59 was expended in the purchase of creosoted timber for the purpose of constructing three ice-piers in the river, a short distance above the town wharfs for the purpose of protecting shipping from floating ice.

Early in 1908 a contract was awarded by the department for the construction of these piers.

During the last fiscal year, the department expended a small sum in moving a quantity of creosoted timber which had been piled on too low ground.

Spring tides rise 28 feet, neaps 23 feet.

## ARGYLE HEAD.

Argyle Head, Yarmouth county, is a thrifty, agricultural community of some 200 or 300 people, situated at the head of Argyle harbour, about 15 miles south of Yarmouth.

For the convenience of the inhabitants, the department, in 1908-9, constructed a small stone wharf, at a cost of \$800. The work, which is of dry, rubble masonry, is 150 feet long, 25 feet wide and from 4 feet to 10 feet high, with fenders and guard timber.

Work was begun October, 1908, and suspended for the season November 30, 1908.

Spring tides rise about 11 feet.

## ARISAIG.

Arisaig, Antigonish county, is on the southeastern shore of Northumberland strait, about 15 miles southeast from Cape George.

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The works at this place include a pier on the northern and a breakwater on the southern side of the cove.

The sum of \$2,150 was voted for expenditure during 1908-9, for completing the reconstruction of the breakwater and for the reconstruction of the top of the outer 140 feet of the pier; an additional amount of \$500 to complete repairs, was authorized on September 24, 1908.

Of the amount voted, the sum of \$898.40 was expended on repairs to the outer end of the breakwater, consisting of the renewal of parts of the covering, cap and close-sheathing, and in the construction of a new block, 30 by 20 feet, with creosoted timber sub-structure, at the outer end of the work, and for which the materials were procured during 1907-8.

The sum of \$1,661.49 was expended in repairs on the piers as follows:—

From the outer end, inwards, 100 feet of the work was repaired by the renewal of two tiers of timber, floor-stringers, covering, cap and sheathing. The next 40 feet was cut down to low water for a width of 20 feet on the seaward side and rebuilt with new materials. Some slight repairs were made on the inner work, and a space of about 18 inches between the main work and the 'L' was closed up with plank.

The total amount expended during the season on these works is \$2,539.89.

#### AVONPORT.

Avonport, King's county, is a small farming village with a population of about 250, situated at the mouth of the Avon river (at this point nearly two miles wide), and on the Dominion Atlantic Railway, 12 miles northwest from Windsor, the county town of Hants, and 13 miles east of Kentville, the county town of Kings. Some two or three millions of bricks are made here during the year.

In 1908-9, the sum of \$522.88 was expended in the purchase of materials for the repair and partial renewal of the work.

Spring tides rise about 40 feet.

#### BADDECK.

Baddeck, the shiretown of Victoria county, is on the northern shore of the Little Bras d'Or lake, near the entrance into St. Patrick's channel.

During 1907-8, a wharf was constructed by the department, 284 feet in length, extending to 18 feet at low water, and consisting of a road approach, 64 feet in length; of a section of cribwork, with creosoted timber substructure, 50 feet long and 48 feet wide and of a creosoted timber pile-extension, 170 feet long and 40 feet wide.

The sum of \$3,500 was appropriated for expenditure, during 1908-9 for improving the property, and the construction of warehouses, and out of the amount voted, up to March 31, 1909, the sum of \$1,851.15 was expended as follows:—

In draining, raising, levelling up and fencing of wharf property, and reshingling the roof and two sides of old warehouse, and in repairing stone foundation under the same.

In procuring all the necessary materials for a new warehouse, 50 by 24 feet, in putting up frame, and boarding in of the same, in fitting up old warehouse for office, waiting room and baggage room, including new outside doors and windows, and in obtaining the native timber required for a cribwork wall around seaward front of property.

#### BADDECK RIVER (NICHOLSON'S).

The Baddeck river, Victoria county, is a large stream flowing through a rich agricultural district and emptying into St. Patrick's channel, an arm of the Bras d'Or lakes, at a point about 5 miles westward of the town of Baddeck.

The sum of \$600 was authorized to be expended, during 1908-9, for the expansion of the shear-dam, for a distance of 50 feet, with pile, brush and stone work, but as it

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was found that the heavy spring freshets had scoured out the sand at the outer end of the old work, down to the rock, and that the old work was badly injured, it became necessary to repair it; to level up the bottom by laying brush and stone, and to construct the expansion with cribwork, and instead of 50 feet, as intended, only 30 feet could be accomplished.

Total expenditure during fiscal year, \$599.95.

## BAILEY'S BROOK.

Bailey's brook, Pictou county, is a large stream emptying into the Northumberland strait, at a point 10 miles to the eastward of the entrance to the Merigomish harbour, and 6 miles to the westward of Arisaig.

The sum of \$3,450 was appropriated for expenditure during 1908-9 in harbour improvements.

Work of construction was commenced August 12, and completed November 30, when the expenditure amounted to \$4,143.88. This amount was expended in extending the protection work, on the eastern side of the entrance, 120 feet; in constructing 80 feet of pile and brush work on top of the beach and 95 feet of brush and stone work in extension, inwards, of the western protection work, and in slight repairs to the shear-dam on the western side of the dam.

## BARACHOIS.

Barachois, Victoria county, is a settlement at the mouth of the Barachois river, on the northern side of St. Anne's and about 3 miles from the entrance into St. Anne's harbour. It has a snug little boat harbour, formed by an outlying beach, and connected, at its southern end with the bay, by a shifting channel through the gravel beach.

During 1907-8, the materials, required for the construction of a training pier, 230 feet long and 15 feet wide, on the western side of the entrance, for the purpose of confining the channel and securing a greater depth of water, were procured, and, during the present year, the sum of \$1,098.61 was expended in the construction of the work.

The work consists of pile work, filled in with layers of brush and stone, and close-sheathed on the channel face with plank, driven into the bottom.

Work was commenced on September 1, and completed on October 9, 1908.

## BASS RIVER.

Bass River, Colchester county, is a farming and manufacturing village of about 500 people, situated on the north side of Cobequid bay, the eastern arm of the Bay of Fundy. It is half way between Truro and Parrsboro, or about 28 miles from each place.

In 1908-9, the sum of \$177.52 was expended in repairs and renewals to the wharf. Work was begun July 4, and completed July 31, 1908.

Spring tides rise about 35 feet.

## BATTERY POINT.

Battery Point, Annapolis county, is a fishing settlement of about 150 people, situated on the east side of Digby Gut, about 4 miles northwest from the town of Digby, and 15 miles southwest from the town of Annapolis.

Spring tides rise 27 feet; neaps, 23 feet.

In 1908-9, the sum of \$400 was expended in the purchase of materials for the extension of the breakwater.

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## BAYFIELD BREAKWATER.

Bayfield, Antigonish county, is on the southern shore of St. George's bay, 15 miles to the westward of the northern entrance to the Strait of Canso.

The sum of \$1,200 was appropriated for expenditure during 1908-9, in repairs and improvements.

Work was commenced September 1, and completed November 11, when the expenditure amounted to \$1,188.96. This amount was expended in reconstructing the faces and top of the 40-foot extension of the concrete wall, which was disintegrated; in repairs to the stone covering on both sides of the concrete wall from the outer end, inwards, and in placing heavy stones at top of slope on the seaward side, over a distance of about 400 feet from the outer end inwards.

## BAY ST. LAWRENCE.

Bay St. Lawrence, Victoria county, is on the northern extremity of the island of Cape Breton, and lies between Cape North and Black point.

At the head of the bay and separated from it by a beach of sand, gravel and stone, there is a small lake or pond, about  $\frac{3}{4}$  of a mile in length, and  $\frac{1}{2}$  a mile in width, with a considerable depth of water.

During the years 1887-8-9, attempts were made by the department to put a channel, through the beach, into the pond, to open it as a boat harbour, but, as it was not protected from the sea, the channel filled in again with sand.

On September 11, 1907, a contract, in the sum of \$24,550 was entered into for the cutting of a channel to 2 feet below low water and 50 feet wide at the bottom, and the construction of channel protection piers on each side of the channel, 290 feet in length, and extending outwards into 8 feet at low water and consisting of cribwork, of which the outer 140 feet have creosoted timber sub-structure.

The work was commenced on June 9, 1908, and up to October 27, when the work was suspended for the season, the protection piers were fully completed, and about one-half of the work in the excavation of channel was done.

Total expenditure during the fiscal year was \$22,230.75.

## BEAR COVE.

Bear Cove, Digby county, is a slight indentation, not more than 400 feet deep, in the coast of the mouth of St. Mary's bay, Bay of Fundy. It is situated 23 miles north of Yarmouth, and equi-distant from Cape Cove, on the south, and Meteghan, on the north, being about 5 miles from each. The population of the settlement, within a radius of a mile, comprises a couple of hundred of people, chiefly dependent for a living on fishing, though some little farming is carried on.

In 1908-9, the sum of \$599.69 was expended in replacing with cribwork the stone approach which had been knocked to pieces by heavy seas in the previous winter. The new work is 100 feet long, 10 feet wide and from 5 to 8 feet high. It was begun October 27, 1908, and finished November 30, 1908.

## BEAVER HARBOUR.

Beaver Harbour, Halifax county, is situated 65 miles, in air line, east of Halifax. It has a farming and lumbering population of from 300 to 400 people.

In 1908-9, the department expended the sum of \$471.53 in building a small break-water-wharf for the convenience of the inhabitants. The work is of substantial cribwork, 80 feet long, 20 feet wide and from 4 to 11 feet high. The work was begun August 24, 1908, and completed September 15, 1908.

Spring tides rise 6 feet



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## BEAVER RIVER.

Beaver River, Digby county, is a prosperous fishing and farming village of some 400 people, situated on the coast of St. Mary's bay, 13 miles north of Yarmouth, and on the county line between Digby and Yarmouth.

In 1908-9, the sum of \$2,471.55 was expended in extensive repairs and renewals; a length of 180 feet, on the northern side of the breakwater, was rebuilt either in whole or in part, 50 feet of this length being entirely rebuilt from the bottom, 15 feet high. Of the remaining 130 feet, the top was removed and rebuilt to a height of about 7 feet. In addition to this, a small block was built on the south side of the shore end of the work to serve as a break, the block being 32 feet long, 6 feet wide and 5 feet high.

Spring tides rise about 15 feet.

The work was begun September 10, 1908, and completed November 30, 1908.

## BELFRY GUT.

Belfry gut, Cape Breton county, the outlet to Belfry lake, which is otherwise separated from Fourchu bay (on the Atlantic coast of Cape Breton island) by a series of islands and connecting sand and gravel beaches, is at the western extremity of Belfry lake, and 2 miles to the eastward of the entrance to Fourchu harbour.

During the fiscal year 1908-9, the sum of \$300.65 was expended in improving the entrance to Belfry lake by deepening, in a channel 15 feet in width at bottom to  $1\frac{1}{2}$  feet below surface level at low water, through the ledge and through gravel, over a distance of 300 feet from the ledge inwards, and in closing a false channel with brush and stone. Work was commenced September 1, and completed October 7.

## BELLIVEAU'S COVE.

Belliveau's Cove, Digby county, is situated on the eastern shore of St. Mary's bay, about 4 miles southwest of Weymouth. It has a population of from 200 to 300, and is one of the most important shipping and fishing ports on the coast of Digby county.

In 1908-9, the sum of \$1,999.21 was expended in taking down and rebuilding a piece on the shoreward end of the western breakwater, 250 feet long, 30 feet wide and 10 feet deep. The work was begun on September 14, and completed October 31, 1908.

## BIG BRAS D'OR.

Big Bras d'Or, Victoria county, is a settlement on the south side of the channel of the same name, near its entrance into the Atlantic.

The wharf, completed during 1888-9, is a block and span structure, 150 feet long and 20 feet wide, with an 'L' on the eastern side of the outer end, 40 by 20 feet, constructed entirely of native timber, and with a depth of 11 feet, at low water, along its channel face.

The amount voted for expenditure during 1908-9, viz., \$2,500, was intended for the renewal of close-piling and fenders, with creosoted timber, and for renewal of all top work, consisting of floor stringers, covering and cap timbers.

Up to the end of the fiscal year, out of the amount voted, the sum of \$150.06 was expended in procuring a portion of the native timber required for the renewal of the top of the work.

## BLUE ROCK.

Blue Rock, Antigonish county, is situated on the southern coast of St. George's bay, about  $2\frac{1}{2}$  miles to the eastward of the entrance into Tracadie harbour, and 6 miles to the westward of the northern entrance into the Strait of Canso.

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During the fiscal year 1908-9, the sum of \$413.11 was expended in renewing the covering of 50 feet of the breakwater; in replacing corner fenders, and in placing stone in the talus on the seaward side.

The work was commenced October 12, and completed October 31.

## BLUFF HEAD.

Bluff Head, Yarmouth county, is a small fishing and farming settlement of a couple of hundred people, situated on the coast of the mouth of the Bay of Fundy, about 5 miles from Yarmouth and about midway between Cheggogin point on the south and Sandford on the north, or about one and a half miles from each.

In 1908-9, the sum of \$2,005.47 was expended in constructing a small breakwater for the protection of the fishing fleet. The work is 130 feet long, 20 feet wide and from 4 to 9 feet high, substantially built of round log cribwork, filled with ballast and protected with a break, 4 feet high, on the seaward face.

The work was begun September 13, 1908, and suspended November 25, 1908.

Spring tides rise about 18 feet.

## BRETON COVE.

Breton Cove, Victoria county, is on the northeastern shore of the island of Cape Breton, about midway between St. Anne's harbour and South Ingonish bay.

During 1904-5, a wharf was constructed to serve the purposes of a boat landing and to afford shelter for fishing boats. It is a continuous cribwork structure, with creosoted substructure, extending to 4 feet at low water, 195 feet in length and 16 feet wide, with an 'L' on the western side of the outer end, 24 by 20 feet.

The gravel and shingle, composing the beach to the northeastward of the rock, was making up along its eastern face and threatened to go around its outer end. On October 28, 1907, a contract was entered into, in the sum of \$5,788, for the extension of the work. The work was commenced on June 8, 1908, and was completed in the early part of the month of August.

The extension is 120 feet long and 13 feet wide, with an 'L' on the western side of the outer end, 24 by 20 feet, and consists of round timber cribwork, creosoted to half tide.

Total expenditure for fiscal year 1908-9, amounted to \$5,890.50.

## CANADA CREEK.

Canada Creek, Kings county, also called Black Rock, is a fishing and farming village of about 150 people on the south shore of the Bay of Fundy, 60 miles east of Digby gut, and 8 miles west of Halls harbour.

The harbour is formed by two piers or breakwaters, built one on either side of a small stream. That on the east, which is detached from the shore, serves merely as a breakwater and was built by the department in 1878-9 at a cost of \$3,000. It is 150 feet long, 25 feet wide on top and from 12 to 15 feet high, substantially built of round-log cribwork, close faced, well ballasted and fendered.

The breakwater on the western side, originally 248 feet long, which serves both as a breakwater and landing pier, was built before confederation at the joint expense of the inhabitants and the provincial government. It is built of round-log cribwork, the seaward side being protected by close-sheathing and of flatted spars.

In 1908-9, the sum of \$626.66 was expended, in petty repairs to the shoreward end of the work and in the purchase of materials for the extension of the breakwater. The repairs were begun September 1, and completed December 15, 1908.

The work was transferred to the control of the Department of Marine and Fisheries on June 12, 1888.

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## CANNING.

Canning, Kings county, is a prosperous village of about 1,500 people, mostly engaged in farming and fruit raising; it is situated on the north or left bank of the Habitant river, which, about  $2\frac{1}{2}$  miles below, debouches into the Basin of Minas. It is an important station on the Kingsport branch of the Dominion Atlantic Railway, which connects with the main line at Kentville, 11 miles to the south.

In 1905-6, the sum of \$14,137.08 was expended in the construction of a wharf; it consists of a piece of cribwork 260 feet long, with an 'L' or return 90 feet long. The main block is 15 feet wide on top with an average height of 22 feet, the 'L' is 12 feet wide on top and 18 feet high. The back batters 3 inches to 1 foot and the front 1 inch to the foot. The whole is founded on piles, driven to rock and cut off level with the mud.

In 1906-7, the sum of \$8,640.59 was expended in continuing the work.

In 1907-8, the sum of \$3,996.55 was expended in completing the wharf and filling in behind, and in building a trestle approach to the wharf, 240 feet long by 20 feet high.

In 1908-9, the sum of \$2,763.17 was expended in building the trestle-work approach to the public wharf and in the purchase of materials for the extension of the wharf down stream.

The work was begun February 1, and suspended March 3, 1909.

Spring tides rise over 40 feet.

## CAPE AUGET.

Cape Auget, Richmond county, is the southern promontory of Madame island, which separates the harbour of Arichat from Petit de Grat inlet, and forms the south-eastern side of Arichat harbour.

During the fiscal year 1908-9, the sum of \$99.87 was expended in completing the work commenced during the previous year. The work performed included the placing of the floor-stringers, covering, cap timbers and a few fenders.

Work was commenced November 2, and completed November 20.

## CAPE NORTH.

Cape North, Victoria county, is a large district at the head of Aspy bay, on the northeastern coast of Cape Breton island. At the head of the bay, there are three extensive sheets of water, known as the north, middle and south Aspy Bay harbours, inclosed by a beach of sand  $4\frac{1}{2}$  miles in length. The entrance to these harbours are shoal and intricate, the best being that of the north harbour.

Plan and specification for a block and span wharf at Sugar Loaf, 110 feet long and 16 feet wide with an 'L' on the eastern side of the outer end, were prepared. During the winter, the materials were all arranged for, but as the whole could not be delivered in time, the work could not be completed, and out of the amount voted, viz.: \$1,000, the sum of \$583.15 only could be expended by the end of the fiscal year. The work still required consists in partial ballasting and in placing the covering and cap.

The work of construction was commenced on February 23, and suspended on March 31.

## CAPE ST. MARY.

Cape St. Mary, or Cape Cove, Digby county, is situated on the east coast of the mouth of the Bay of Fundy, near the entrance to St. Mary's bay. It is 19 miles north of Yarmouth and 27 miles south of Weymouth. It has a population of about 150 people, engaged chiefly in fishing, and is one of the best fishing stations on the coast of St. Mary's bay; cod, haddock and herring being caught in great abundance.

On the 23rd of November, 1907, a contract was awarded, in the sum of \$9,735, for an extension to the breakwater. The work was begun in July, and completed

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on December 31, 1908. The extension is 140 feet long, 30 feet wide and from 24 to 26 feet high, substantially built of round-log cribwork and sheathed all round up to 8 feet, above L.W.O.S.T., with 4-inch creosoted plank as a protection against the ravages of the limnoria.

During the last fiscal year the amount expended was \$9,502.50.

## CARIBOO ISLAND.

Cariboo island, Pictou county, is in the Northumberland strait, 5 miles to the westward of the entrance to Pictou harbour.

A cause-way of brush and stone, 1,330 feet in length, between the western extremity of the island and the mainland (on flats dry at extreme low water) commenced in 1890-1, was, after the completion of work undertaken in 1904-5, up to the level of about 1 foot above extreme high, or 7 feet above extreme low water.

The work performed in 1904-5 consisted in repairing the stone talus on the seaward side, constructing a stone wall on the inner side from the bottom up, constructing a stone wall, two tiers in height, on top of the work on the seaward side, and repairing the roadway.

During a very heavy gale in the autumn of 1906, the top of the causeway was carried away down to about 6 inches below extreme high water and the stones forming the wall on the seaward side were scattered over the work, leaving it impassable for teams at high water and nearly so at any time of tide. Subsequently, the middle third of the work was carried away down to about 2 feet below extreme high water.

During the fiscal year 1908-9, \$5,118.99 was expended in nearly completing the raising of the causeway and talus to a proposed height of 3 feet above extreme high water, over a distance of 700 feet from the mainland.

In raising the causeway to about 2 feet above high water from a point 700 feet from the mainland to the island, and in driving the piles in a proposed pile and brush work, 555 feet in length (in bents 5 feet apart, centre to centre, with three piles in each), to protect the middle third of the causeway.

Work was commenced August 17, and suspended November 25.

## CHEGGOGIN POINT.

Cheggogin Point, Yarmouth county, is a small farming and fishing settlement, situated on the east coast of the mouth of the Bay of Fundy, about 4 miles northwest from Yarmouth.

In 1908-9, the department expended the sum of \$998.76 in constructing a small breakwater for the protection of the fishing fleet. The work consists of a piece of substantial cribwork, 70 feet long, 20 feet wide and from 5 to 12 feet high.

The work was begun October 3, and completed November 23, 1908.

Spring tides rise about 12 feet.

## CHESTER.

Chester, Lunenburg county, is a village of about 1,000 people, engaged in fishing, farming and general trade, situated at the head of Mahone bay, 45 miles southwest from Halifax. During the summer season, a steamer, plying between Halifax and Lunenburg, makes weekly calls. It is a place of some importance, owing to its fine situation and beautiful scenery. It is well known and frequented as a summer resort.

In 1908-9, the department expended the sum of \$113.80 in re-opening the channel through the isthmus joining the mainland and Peninsular point, which had filled in since it was last dug out in 1901. The work was begun September 8, and finished December 2, 1908.

Spring tides rise 6 feet, neaps 5 feet.

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## CHETICAMP WHARF.

Cheticamp, Inverness county, on the west coast of Cape Breton island, 18 miles north of Margaree, is a secure harbour, being sheltered from the west and south by Cheticamp island and a connecting beach. The entrance is from the north through a dredged channel.

During the fiscal year 1908-9, the sum of \$132.70 was expended in renewing the covering of the extension and in general repairs.

Work was commenced October 2, and completed October 31.

## CHEVERIE.

Cheverie, Hants county, with a population of about 350, is situated on the right or east bank of the River Avon, where it debouches into the Basin of Minas, some 15 miles north of Windsor, the county town. It is a good farming district, but the principal trade of the place is the quarrying and shipping of gypsum to the United States.

In 1908-9, the sum of \$3,029.83 was expended in extensive renewals and repairs to the wharf length of 80 feet on the outer end, which was much decayed, was taken down to a depth of from 6 to 8 feet, and rebuilt. On the shore end, a re-enforcing block, 60 feet long, 10 feet wide and about 8 feet high, was built to protect the old work. The whole of the planking, including most of the stringers, was renewed.

The work was begun on October 2, and completed December 2, 1908.

## CHURCH POINT.

Church Point, Digby county, is situated on the southeast side of St. Mary's bay, 6 miles southwest of Weymouth. It has a population of 200 people, engaged in farming and fishing.

The works, which consist of a wharf, a retaining wall and a breakwater, appear to have been built between the years 1855 and 1866, at the joint expense of the inhabitants and the provincial government.

In 1875-6, the department expended the sum of \$2,000, the inhabitants contributing an equal amount, in repairing the northern face, and in building an 'L,' 72 feet long by 20 wide, at right angles to it, with the object of preventing gravel from working around the outer end. The movement of the gravel, which is from south to north, has always been more or less of a difficulty and a detriment to the port.

Since 1890-1, the department has expended various sums in repairing, improving, &c., the work, of which full details are contained in the annual report for 1906-7.

In 1907-8, the sum of \$1,099.36 was expended in completing to full height a portion of the re-enforcing block on the north side of the breakwater, 93 feet long and 13 feet wide.

In 1908-9, the sum of \$2,400 was expended in extensive repairs and renewals. The work was begun August 21, and suspended October 29, 1908.

## CLARK'S HARBOUR.

Clark's Harbour is a town of about 1,400 people, situated on the southern side of Cape island, which is the most southern point of the province of Nova Scotia. For a number of years the shore had gradually become denuded, through the action of the ocean, and the people in that vicinity requested the construction of protection works.

During the last fiscal year, the work was undertaken; it was commenced on August 24, and was closed down on October 24, 1908.

About 3,300 feet in length of shore has been protected by a work, 8 feet wide on top, averaging about 7 feet in height, also two culverts, each 40 feet in length, with

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box openings, 3 by 4 feet, constructed of good suitable stone with cement paving. About 600 feet in length still require protection.

Spring tides rise 12 feet; neaps, 9 feet.

Total expenditure during last fiscal year, \$4,495.92.

#### COW BAY (PORT MORIEN).

Cow Bay (Port Morien), Cape Breton county, is on the eastern coast of Cape Breton island, about 18 miles to the eastward of the entrance to Sydney harbour.

During the fiscal year 1908-9, the sum of \$8,150.37 was expended in continuing the placing of concrete blocks against the seaward face of the breakwater, in progress in 1906-7 and 1907-8; in placing concrete in four 6-foot by 8-foot chambers, in outer face-work, at its junction with the inner counterfort, and in two 8-foot by 8-foot chambers, in the cribwork, at the junction of the outer face with the beach; in repairs to the covering of the breakwater; in shingling and repairing the warehouse, and in constructing a shed, for storing sand at the back of the warehouse.

Sixteen concrete blocks were placed on the seaward side of the breakwater, twelve having a combined length of 128½ feet, in the space left last year between the inner and centre counterforts, and four having a combined length of 42½ feet, against the outer face, at its junction with what remained of the central counterfort. The blocks completing the space between the inner and central counterforts are 12 feet in height, 6½ feet in width at top, 7 feet above extreme low water, and 11 feet in width from one foot above extreme low water to the bottom. The blocks at the junction with the central counterfort are 16 feet in height, 3½ feet in width at top, 11 feet above extreme low water, and 11 feet in width, from one foot above extreme low water to the bottom.

The top of the covering of the breakwater, on the seaward side, is about 13 feet above extreme low, or 7 feet above extreme high water.

Operations were commenced September 1, and suspended January 18.

#### COW BAY RUN.

Cow Bay Run, Halifax county, is situated on the east side of the mouth of Halifax harbour, on the Atlantic coast, about 2 miles east of Devil's island. It is a broad bay, formed by a narrow strip of beach, about a mile in length, separating the Atlantic from a fresh-water lake, having an area of 1¼ square miles.

In 1904-5, the sum of \$5,000 was expended in constructing a breakwater for which timber was delivered in 1903-4. The work, which is substantially built of stone-filled cribwork, is 200 feet long; the shoreward half length being 10 feet wide and from 6 to 10 feet high. At the end of the fiscal year the work still lacked fenders and covering.

In 1905-6, the department expended the sum of \$500 in completing the breakwater. The work done consists in placing fenders for the whole length of the work, and in raising its outer portion and in planking for the whole length.

In 1908-9, the department expended the sum of \$2,350.24 in extending the breakwater constructed in 1904 and 1905, by a new block of substantial cribwork, 50 feet long, 20 feet wide and from 13 to 15 feet high.

The work was begun on October 10, 1908, and completed March 23, 1909.

Spring tides rise 6 feet.

#### CRIBBIN'S POINT.

Cribbin's Point, Antigonish county, is on the west side of St. George's bay, 8 miles to the southward of Cape George, and 5 miles to the northward of the entrance to Antigonish harbour. For details of construction see report for 1908.

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Out of the amount voted for 1908-9, for repairs and for the reconstruction of the top of the outer end of the old original work, viz.: \$3,800, up to March 31, 1909, the sum of \$1,635.48 was expended as follows:—

In repairing the road approach, in re-ballasting and renewing part of the covering along seaward face of work, and in other repairs.

In procuring the native timber, iron and ballast required for the reconstruction of the top of the outer end of the old work, for a distance of 80 feet.

Repairs were commenced on September 21, and completed October 19, 1908, and the materials for reconstruction of top were obtained, from February 9 to March 12, 1909.

## CULLODEN.

Culloden, Digby county, is a farming and fishing settlement of about 150 people, situated on the coast of the Bay of Fundy, 6 miles northwest from the town of Digby, and 3 miles southwest from Digby gut.

In 1907-8, the department, in order to provide some protection to the fishing fleet, built a breakwater on the west side of Broad cove. The work, which was done by contract, is 120 feet long, 30 feet wide and from 16 to 28 feet high. At the outer end of the work, which is just at low water mark, there is a depth, at high tide, of about 24 feet of water. The shore end of the work is rock bank, 100 feet long, 30 feet wide and from 2 to 15 feet high. The outer half length of the breakwater is sheathed with 4-inch creosoted plank from the bottom to the level of half tide.

In 1908-9, the sum of \$438.30 was expended in constructing a block of cribwork 25 feet long, 20 feet wide, and 10 feet high, to fill a gap between the side of the shore end of the breakwater and the cliff into which the sea beat with such force as to destroy the stone approach to the breakwater.

The work was begun on November 2, and finished November 17, 1908.

## DAVID'S COVE.

David's cove, Digby county, is a slight indentation in the general coast line of St. Mary's bay, half a mile north of Salmon river. The whole district is thickly settled with a thrifty and industrious population, dependent for their livelihood on fishing and farming.

In 1908-9, to protect the fishing fleet, the department expended the sum of \$2,497.90 in constructing a breakwater. The work, which is substantially built of cribwork, is 110 feet long, 25 feet wide and from 6 to 14 feet high.

The work was begun September 14, and completed November 26, 1908.

Spring tides rise about 17 feet.

## DEEP BROOK.

Deep Brook, Annapolis county, is the name of a thickly populated, agricultural district, about 6 miles below Annapolis, on the south shore of the Annapolis basin.

In 1908-9, the sum of \$1,193.73 was expended in the purchase of materials for the construction of a public wharf of pilework, for the convenience of local trade.

## DELAPE'S COVE.

Delaps cove, Annapolis county, is situated on the south shore of the Bay of Fundy, 12 miles to the eastward of Digby gut.

The breakwater is constructed on the eastern side of the mouth of a small tidal pond which affords safe shelter for fishing boats and a convenient place for keeping schooners and other small craft during the winter. The breakwater affords a good landing place for coasting vessels and good shelter from easterly storms. The shore,

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on the opposite side of the stream, protects the breakwater and the pond from westerly storms.

The breakwater, which is now 185 feet long, 25 to 28 feet wide and from 12 to 21 feet high, was built by the department in 1878-9. Since its construction, frequent expenditures have been made in repairs and renewals, of which full particulars are given in the departmental report of 1906-7.

In 1908-9, the sum of \$2,137.33 was expended in rebuilding a length of 80 feet of the middle of the breakwater, that was destroyed by a violent storm the winter before.

The work was begun on September 21, 1908, and suspended on March 31, 1909.

## DIGBY.

Digby, Digby county, the shire town of the county, with a population of about 1,500 people, is beautifully situated on the southwestern end of Annapolis basin. It is an important station on the Dominion Atlantic Railway, 67 miles north of Yarmouth, 150 miles from Halifax, and 20 miles from Annapolis. It is also the port of call for the daily steamer of the Dominion Atlantic Railway plying between Digby and St. John.

The harbour is open at all seasons and well protected from nearly all quarters; storms from the north and northeast drive a heavy sea against the pier, and if, at such times, there be much drift ice in the basin, the structure is likely to suffer damage.

Full details of construction and repairs are contained in the annual report for 1906-7.

In 1907-8, the sum of \$1,363.85 was expended in miscellaneous repairs and renewals and \$650 in the purchase of Georgia pine for further extensive renewals.

In 1908-9, a large sum was expended in continuing the repairs and renewals to the pier. Of this sum \$1,798.53 was expended in the purchase of Georgia pine, and a further sum of \$14,913 out of the special appropriation for creosoted timber.

The repairs and renewals were begun August 3, 1908, and suspended March 3, 1909.

On May 22, 1908, the department awarded a contract for the construction of a spur-pier, in the sum of \$17,900. This spur, which will be 350 feet long, 50 feet wide and from 30 to 35 feet high, constructed of creosoted piles, with Georgia pine stringers and caps, projects from the southern side of the middle length of the pier, at an angle of 45 degrees. Its object is to provide a berth for the daily steamer and for other vessels using the pier, while the main structure is undergoing thorough restoration.

The work was commenced in August, and suspended for the season at the end of November, 1908.

Total expenditure during last fiscal year, \$49,776.99.

## DILIGENT RIVER.

During the last fiscal year, the sum of \$367.77 was expended in removing Gore rock, which was a menace to navigation. About 225 tons of stone were removed.

Work was begun here July 3, and continued until July 21, 1908.

## EAST DOVER.

East Dover, Halifax county, is a small fishing village situated at the mouth of St. Margaret's bay, about 15 miles southwest of the city of Halifax. The population comprises about 100 people, almost exclusively dependent upon the fisheries.



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In 1908-9, the sum of \$193.94 was expended in the construction of a road approach from the main road to the wharf.

Work was begun December 8, 1908, and suspended, though not quite completed, January 23, 1909.

## EASTERN PASSAGE.

Eastern Passage, Halifax county, is an important fishing village of some 300 or 400 people, situated on the eastern side of Halifax harbour, 5 miles below the city.

A small brook which empties into a cove at this place, used formerly to keep the channel open for boats, but of late years, the beach which protected the cove has been gradually moving shoreward, until protection works became indispensable.

In 1908-9, the sum of \$4,979.61 was expended in constructing a breakwater for the further protection of the harbour. The work is 350 feet long, of which 200 feet is 10 feet wide and 150 feet is 15 feet wide. The work is from 5 to 18 feet high, substantially built of round log cribwork. Some 1,000 feet in length of brush fence was also constructed to check the driving of the sand.

Work was begun October 22, 1908, and not quite completed on March 31, 1909.

## EAST HARRIGAN.

East Harrigan, Halifax county, is a fishing and mining settlement of about 200 people, situated 9 miles east of Salmon river, or about 65 miles in an air line east of Halifax.

In 1908-9, the sum of \$800 was expended in the construction of a road approach from the main road to the wharf.

The work was begun December 8, 1908, and suspended, though not quite completed, on January 23, 1909.

## EAST JEDDORE.

East Jeddore, Halifax county, is a settlement of about 600 people, scattered along the eastern side of Jeddore harbour, about 30 miles east of Halifax, and 10 miles west of Ship Harbour. The inhabitants are chiefly engaged in fishing, the fleet comprising ten schooners and a number of small boats. The harbour is an excellent one with a good shelter and easy approach, the channel being from 20 to 40 feet deep, and from 800 to 1,000 feet wide.

In 1908-9, a second block of cribwork was built for the protection of the wharf, 22 feet long, 20 feet wide, and 12 to 15 feet high. A small freight shed 22 by 15 feet was also constructed for the use and convenience of local shippers.

The work was begun October 1, and completed October 25, 1908.

Total amount expended, \$946.26.

## EAST LAWRENCETOWN.

East Lawrencetown, Halifax county, also called Conrod's Cove, is situated on the Atlantic coast, about 12 miles west of Halifax.

For the protection of the public road, which was being gradually worn away by the sea, the department in 1908-9 expended the sum of \$1,198.23 in building a piece of cribwork 300 feet long, 8 feet wide and from 5 to 7 feet high.

The work was begun September 28, and completed November, 1908.

## EAST PORT LE HEBERT.

East Port Le Hebert is a village about 15 to 17 miles east of Liverpool, with a population of about 150. All those people are engaged in fishing, their principal income being derived from the lobster fishery.

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During the last fiscal year, protection works were constructed, operations beginning October 1, 1908, and closing October 31, of the same year.

The work consists of two piers, so situated that boats requiring shelter and protection from the drift ice can bring their lobsters and moor the crates between the piers in absolute safety. These piers are each 80 feet in length, 14 feet wide and 18 feet high, separated from each other a distance of 60 feet, and are located on the edge of the channel, in about 8 feet of water, at L.W.O.S.T. They are constructed of solid cribwork; this year, one was completed, and the other about two-thirds built.

Spring tides here rise 6 feet; neaps, 4 feet.

## EAST RIVER.

During the months of October and part of November, 1908, an examination and survey were made with a view of making a channel up the East river from Pictou to New Glasgow.

## EATONVILLE.

Eatonville is a small settlement where extensive lumbering interests have been carried on for the last twenty-five or thirty years. It is situated about 12 miles west of the town of Advocate.

During the last fiscal year, the sum of \$4,500 was granted for the construction of a breakwater on the opposite side of the harbour, so that the entrance could be protected on both sides.

This breakwater has been completed, at a cost of \$4,494.22; it runs from the cliff, seaward, a distance of about 187 feet; it is 14 feet wide on top, with a batter of two inches to the foot on the outside, and one inch to the foot on the inside, is 11 feet high at the cliff, and 29 feet high at its outer end. It is built of continuous, round log, ballast-filled cribwork, double fendered on both sides and sheathed with 7-inch logs, along its outside face and end. The foundation logs all rest upon a solid rock reef, to which they are bolted, the rock being levelled off to a suitable foundation.

Spring tides here rise 37 feet; neaps, 31 feet.

Work was begun here August 24, and completed November 26, 1908.

## ENGLISHTOWN.

Englishtown, Victoria county, is on the southern shore of and immediately within the entrance to St. Ann's harbour, a fine basin, 7 miles in length, about 2 miles in width, and carrying a depth of about 50 feet, at the head of St. Ann's bay on the northeast coast of the island of Cape Breton.

The harbour is formed by a long narrow beach which extends from the northern to within 180 yards of the southern side. The beach is about a mile and a half in length, and is used as a highway from the northern section of Victoria county to the ferry, which plies between its southern end and Englishtown, on the southern side of the entrance.

The sum of \$199.83 was expended, during the year ended March 31, 1909, in extending the old ferry wharf, a distance of 10 feet, and in the construction of a new block 40 feet long and 10 feet wide, on the western side of the old wharf, and 20 feet therefrom, to form a small dock for the protection of the ferry scow during westerly gales.

The work was commenced on November 9, and completed on November 27, 1908.

## FOX ISLAND.

Fox Island, Halifax county, is situated on the Atlantic coast of Nova Scotia, about 13 miles east of Halifax and is about 900 feet from the mainland. It is a very small island, being only some three or four acres in extent, and no point on it is more

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than 6 feet above H.W.O.S.T. It has no permanent inhabitants, but during the summer season is used by a number of fishermen as a fishing station.

In 1908-9, the sum of \$1,052.62 was expended in repairing the breach made by the sea under the west side of the beach protection. The work, for a distance of 100 feet, was under-pinned and close-sheathed from the top to a depth of about three feet below the bottom, to prevent further scouring.

The work was begun December 21, and completed December 30.

Spring tides rise 6 feet; neaps, 5 feet.

## FREEPORT.

Freeport, Digby county, is situated on the southern end of Long island, on the east side of Grand Passage, 40 miles southeast of Digby Gut and 26 miles southwest from Trout Cove. The population consists of about 700 people, engaged chiefly in fishing and farming. It is a port of call for subsidized steamers plying between Yarmouth, N.S., and St. John, N.B.

In 1908-9, the sum of \$443.92 was expended in the construction of a concrete wall, on the seaward side of the shore end of the breakwater, for the purpose of preventing the sea from washing away the stone approach. The piece of concrete is 25 feet long, from 6 to 9 feet high and from  $1\frac{1}{2}$  to  $3\frac{1}{2}$  feet thick. Some miscellaneous repairs were also made to the breakwater. The work was begun June 27, and completed October 5, 1908.

Spring tides rise about 21 feet.

## GEORGEVILLE.

Georgeville, Antigonish county, is on the southern shore of Northumberland strait,  $6\frac{1}{2}$  miles southwest from Cape George.

During the fiscal year 1908-9, the sum of \$1,499.28 was expended in close-sheathing a portion of the inside face and the face of the old 'L,' in renewing the covering and in re-ballasting, where necessary, and in procuring the balance of the materials required for the construction of the triangular block to be placed in the angle formed between the old 'L' and the extension.

The work was commenced on October 1, 1908, and continued to March 31, 1909.

## GLACE BAY BEACH.

Glace Bay Beach, Cape Breton county, is on the northern coast of Cape Breton island, between Glace Bay and Port Morien.

A contract entered into on April 23, 1908, for the construction of a work to protect the public road crossing the beach at the head of Big Glace bay and separating the bay from Big Glace Bay lake, was completed on December 3. The protection work is 4,000 feet in length, of piles and brush. Piles were driven 4 feet apart, centre to centre, transversely, and 5 feet apart, centre to centre, longitudinally, in a trench excavated to 2 feet below the level of high water. The space, longitudinally, between the piles was filled in to a height of 6 feet 6 inches above the level of high water, with small spruce trees, trimmed and closely packed, after which the tops of the piles, in each bent, were connected with  $\frac{3}{4}$ -inch tie rods.

The total expenditure during the last fiscal year amounted to \$9,415.72.

## GRAND ETANG.

Grand Etang, Inverness county, is on the Gulf of St. Lawrence, about midway between the harbours of Margaree and Cheticamp. For details of construction of wharf see previous reports.

During the fiscal year 1908-9, the sum of \$10,513.53 was expended in removing the remains of the outer block on the west side; in procuring the creosoted timber

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and other materials required, and in reconstructing the west block; in completing the reconstruction of the northeast block, undertaken in 1907-8, and in reconstructing about 80 feet of brush and stone embankment, with talus and covering, on each side.

All the work undertaken in 1907-8 was completed, with the exception of the reconstruction of 50 feet of cribwork adjoining the outer blocks on each side.

Operations were commenced July 8, and suspended January 20, 1909.

## GRAND NARROWS.

Grand Narrows is on the southeastern side of the Barra strait, which connects the Great with the Little Bras d'Or lake. It is an important station on the I.C.R. at the southern end of the railway bridge which crosses the strait here, and is also a landing place for steamers, which ply on the lakes.

During 1908-9, the sum of \$35.23 was expended in repairs to the shed, which consisted in the renewal of two rafters, two wall plates, one corner post, five uprights, of some rough boarding, shingles and inside sheathing and in replacing eleven panes of glass in two of the windows.

The work was commenced on September 1, and completed on September 4, 1908.

## GRASS COVE.

Grass Cove, Victoria county, is on the western side of the Little Bras d'Or lake, about 2 miles to the northward of Iona, a station on the I.C.R. at the western end of the Grand Narrows Railway bridge.

An amount was voted towards the construction of a wharf extending to 12 feet at low water, to enable the people in the neighbourhood to ship pit timber to the coal mines in eastern Cape Breton.

The proposed work is a block and span structure, with creosoted timber substructure, 164 feet long and 18 feet wide, with an 'L' on the outer end, 18 by 20 feet; it is estimated to cost \$4,700.

Out of the amount voted for 1908-9, towards the construction of the work, viz.: \$1,500, the sum of \$982.66 was expended up to March 31, 1909, in procuring all the native timber, the iron and the ballast required in its construction.

## GREEN HARBOUR.

Green Harbour is situated on both sides of a small inlet about 3 miles west of Lockeport. On both sides of this inlet are settlements known respectively as East and West Green Harbour, each settlement containing from 150 to 200 people. The natural market for these people is Lockeport. The department, during the last fiscal year, granted the sum of \$1,300 to construct a small wharf on the eastern side of this inlet, and to cut a channel to said wharf. Work was commenced here August 28, and completed on October 21, 1908.

The landing wharf consists of a rock bank 16 feet wide on top and about 50 feet long; of a span 15 feet long, and a blocking 20 feet square with a height of 11 feet. A channel 350 feet long, 30 feet wide and 3 feet deep, was also cut through the beach.

Spring tides rise 6 feet; neaps, 4½ feet.

## GULF SHORE.

Gulf Shore is a scattering settlement, situated about 6 miles from the town of Pugwash, of about 400 people, whose chief occupations are farming and fishing. In order to protect the lobster fishermen, in the pursuit of their trade, the department decided to construct a breakwater, during the last fiscal year; the sum of \$2,409.85 was expended. Work was commenced on September 15, 1908, and continued intermittently until March 25, 1909.

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All the materials were procured and the cribs partially constructed but were not floated out to position, owing to the lateness of the season and the exposed condition of the foreshore.

Spring tides rise here  $6\frac{1}{2}$  feet; neaps, 5 feet.

## HALLS HARBOUR.

Halls Harbour, Kings county, is situated on the south side of the Bay of Fundy, about 65 miles northeast of Digby Gut and 12 miles southwest of Scott's Bay; it is about 12 miles northwest of Kentville, the county town of Kings, and the headquarters of the Dominion Atlantic Railway.

The harbour, though small, is one of the best at high water, between Scott's Bay and Digby Gut. Spring tides rise 39 feet; neaps, 33.

In 1908-9, the sum of \$7,502.66 was expended in the thorough restoration of the shore end of the main breakwater and of the wharf-wall along the eastern side of the inner harbour, a length of 270 feet, from 10 to 15 feet wide and from 12 to 16 feet high.

Work was begun May 15, 1908, and completed March 15, 1909.

## HANTSPORT.

Hantsport, Hants county, has a population of about 1,500 and is situated on the left or west bank of the Avon river, here  $1\frac{1}{4}$  miles wide, about half way between Windsor and the mouth of Avon river, where it enters the Basin of Minas. It is an important station on the Dominion Atlantic Railway, 7 miles from Windsor and 53 miles from Halifax.

The wharf, which was built in 1897-8, is constructed of stone-filled cribwork, 200 feet long, 32 feet wide, with an 'L' 32 feet long, on the outer end, giving a face length of 64 feet, where it has a height of 26 feet. At high water there is a depth of 23 feet along the face of the work. At low water the beach is dry.

In 1908-9, the sum of \$498.30 was expended in renewing the whole top of the wharf, including guard-stringers and plank.

The work was begun July 6, and finished August 6, 1908.

## HARBOUR AU BOUCHE.

Harbour au Bouche, Antigonish county, on the southern side of St. George's bay, about 3 miles to the westward of the northern entrance to the Strait of Canso, is a small natural harbour, about half a mile in length and width, with a depth of about 14 feet at low water.

During the fiscal year 1908-9, the sum of \$1,113.17 was expended in procuring the creosoted piling, and the balance in procuring all the other materials required, with the exception of covering and iron, for a proposed extension of 22 feet to 11 feet at low water to Crispo's wharf, purchased in 1907.

Total expenditure to March 31, 1909, \$1,132.15.

## HARBOURVILLE.

Harbourville, Kings county, is situated on the south shore of the Bay of Fundy, 53 miles northeast of Digby Gut. The population of the settlement is about 200 people, engaged in fishing and farming, the former being the staple industry. The harbour, which is only 400 feet long by 200 wide, and dry at low water, is formed by the mouth of Givans brook, and affords, at high water, a complete shelter from storms from all quarters to vessels drawing up to 14 feet of water.

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In 1908-9, the sum of \$385.92 was expended in petty repairs to the shore end of the breakwater, and in the purchase of timber for the extension of the work. Repairs were begun November 3, and completed November 14, 1908.

Spring tides rise about 38 feet.

The work was transferred to the control of the Marine and Fisheries Department on June 12, 1888.

#### INVERNESS.

Inverness, Inverness county, formerly known as Broad Cove, is an incorporated and growing mining town on the northwestern coast of Cape Breton island, about midway between the harbours of Mabou and Margaree.

The sum of \$10,000 was appropriated for expenditure in 1908-9, towards harbour works at Inverness; re-opening and protecting a channel into McIssac's pond, a small sheet of water with a good depth over a limited area, formerly separated from the Gulf of St. Lawrence by a beach of sand 400 feet in width.

During the fiscal year 1908-9, \$910.96 was expended in procuring nearly all the materials (with the exception of some creosoted piling) required in the reconstruction, with pile, brush and stone work, of 300 feet of old channel protection work on the eastern side of the entrance.

#### ISAAC'S HARBOUR.

Isaac's Harbour, Guysboro county, is a small but safe harbour on the southern or Atlantic coast of Nova Scotia, 36 miles to the westward of Cape Canso and 16 miles to the eastward of the entrance to St. Mary's river.

The public wharf, on the west side of the harbour, completed in 1901, extends 295 feet to 12 feet at low water. It consists of a stone abutment, 135 feet in length and a block and span extension, 160 feet in length, including three blocks, each 22 by 22 feet, and an outer block, 22 feet in line of work by 48 feet. In 1902-3, a warehouse, 37 by 17 feet, was constructed on the south side and at the inner end of the wharf.

In July, 1908, the sum of \$21.15 was expended in renewing unsound guard rails and covering of the wharf.

#### JOGGINS' MINES.

Joggins Mines is a town of some 1,500 people, situated on the Bay of Fundy, about 10 miles northwest of Amherst town. The department constructed a breakwater at this place some twenty years ago, which has been renewed from time to time, and during the last fiscal year, the sum of \$3,089.91 was expended in effecting further repairs.

Work was commenced on September 8, 1908, and continued until January 8, 1909.

The road on the right hand side, going down, had been blocked, through the caving in of the bank, and, in order to prevent further trouble, we excavated and placed in the excavation, a buttress of cribwork, 6 feet wide, 7 feet high and 120 feet long. We took up the entire top of the breakwater and had to renew from 4 to 6 feet in height of the old work for its entire length.

The ballast, which had been forced out, was replaced; and the entire top ballast floor was renewed.

The outside end and entire outside face of the breakwater was sheathed with 9-inch logs flatted to 7-inch faces, fastenings of which averaged about nine bolts 24 inches long to each log.

Spring tides rise 37 feet; neaps, 30 feet.

#### JOHNSTON'S HARBOUR.

Johnston's Harbour, Richmond county, is on the southern shore of the Great Bras d'Or lake, about 19 miles to the northward from St. Peter's canal, and 29 miles from the head of East bay.

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A cribwork wharf, commenced by the inhabitants in 1881, was raised by the department during 1883-4, extended by the addition of a native timber pile-head in 1893-4, and the latter was repaired during 1901-2.

An examination made in October, 1906, showed that all the native timber piles were much weakened by the attacks of the teredo, and that several of them had been cut into, so that the wharf was in danger of collapsing.

During 1907-8, the sum of \$49.56 was expended in temporary repairs, and a further sum of \$186.97 was expended in procuring the native timber for the superstructure of the proposed new pile-head.

During the year ended March 31, 1909, the old native timber pile-head was removed, and a new one, 40 feet long and 42 feet wide, supported on creosoted timber piling, was constructed in its place, and out of the amount voted, viz., \$1,100, the sum of \$1,099.44 was expended in completing the work, which was commenced on September 1, and completed on November 7, 1908.

## JUDIQUE (BAXTER'S).

Judique (Baxter's), Inverness county, so called to distinguish it from Little Judique and Judique (McKay's Point), is on the western coast of Cape Breton island, near Campbell's Point, which is mid-way between Long Point and McKay's Point, and 4 miles distant from each.

During the fiscal year 1908-9, the sum of \$1,200 was expended in constructing a wharf, extending 176 feet to  $1\frac{1}{2}$  feet at extreme low water, the materials for which were procured in 1907-8.

The wharf is a continuous cribwork structure, fully ballasted and protected, at the outer end, on the northern side, and on the southern side for a distance of 24 feet from the outer end, by close sheathing. Spring tides rise  $4\frac{1}{2}$  feet.

Construction was commenced July 3, and completed September 29.

## JUDIQUE (MCKAY'S POINT).

Judique (McKay's Point), Inverness county, is on the east side of St. George's bay, 10 miles south of Port Hood and 16 miles north of the northern entrance to the Strait of Canso.

The breakwater at McKay's Point, commenced in 1893, and completed in 1900, is 725 feet in length and 20 feet in width, with an 'L' 20 by 20 feet at the outer end, of round timber, laid open-faced with creosoted timber sub-structure, close fendered round the outer end and 'L,' and protected on the seaward side by a talus of stone. The depth at extreme low water, at the outer end is 6 feet. Spring tides rise  $4\frac{1}{2}$  feet.

During the fiscal year 1908-9, the sum of \$1,358.99 was expended in cutting down to low water; in re-constructing the outer block, and in placing quarried stone in the talus, on the seaward side over a distance of 100 feet, from the 'L' inwards.

Work was commenced September 1, and completed November 30.

## KELLEY'S COVE.

Kelley's Cove, Yarmouth county, lies about  $2\frac{1}{2}$  miles south of the present town of Yarmouth. Fifty to one hundred years ago it was the harbour of the place, and around its shores was all that constituted the town. At present it is merely a shelter for about a dozen fishing boats, and there are but a few houses in the immediate vicinity.

In 1908-9, the sum of \$4,299.99 was expended in building an extension to the breakwater, 90 feet long, 26 feet wide and from 14 to 16 feet high.

Work was begun September 15, 1908, and suspended January 5, 1909.

Spring tides rise 12 feet.

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## KENNINGTON COVE.

Kennington Cove, Cape Breton county, is on the north shore of Gabarus bay, 3 miles west from White Point, a low rocky point at the entrance to the bay, 2 miles southwest from the entrance to Louisburg harbour.

During the fiscal year 1908-9, the sum of \$500.32 was expended in improving a landing place for boats, by removing boulders over an area 200 feet in length by 100 feet in width.

Work was commenced September 21, and completed November 21.

## KETCH HARBOUR.

Ketch Harbour, Halifax county, is a small fishing settlement of about 150 people, situated on the Atlantic coast, about 16 miles west of Halifax.

There is a snug boat harbour, but, owing to lack of protection, fishing boats and stages were frequently damaged by heavy seas. To afford some protection and shelter, the department, in 1908-9, expended the sum of \$2,001.33 in constructing a break-water. The work, which is substantially built of round-log cribwork, is 100 feet long, 20 feet wide, and from 5 to 20 feet high.

Work was begun September 3, and completed October 14, 1908.

## LA HAVE ISLANDS.

La Have Islands, Crooked channel, off the coast of the southern part of Lunenburg county, opposite and to the southward of the mouth of La Have river, are from thirty to forty islands, varying in size from a few square yards to about a square mile. Most of the larger islands are inhabited, their aggregate population being some 200 or 300, engaged in fishing and farming. The islands are distant from the mainland from  $1\frac{1}{2}$  to 3 miles, and they are all more or less connected with each other and to the mainland by shallow banks or mud flats, covered at H.W.O.S.T., but bare, or nearly so, at low water. In and about the flats are numerous channels and deep holes, but boat navigation is intricate and, in many cases, very circuitous.

The principal channel through the archipelago lies approximately east and west, and is appropriately known by the name of 'Crooked Channel,' its landward end being in Green bay, to the southward and of Petite Rivière beach, a long, narrow strip or bar of sand projecting about a mile and a quarter from the main shore, it gave no direct access to the village of West Dublin, lying about 2 miles to the northward.

To give the inhabitants of the larger islands, viz.: Bushe's and Bell's, more direct communication with the mainland, the department, in 1893, dug a boat channel, 2,300 feet long, 40 feet wide and 3 to 4 feet deep, at L.W.O.S.T. in a northerly direction from the main channel to the south, to deep water on the north, between the extremity of Petite Rivière beach and Bushe's island. The work was all done by hand, at low water, at a cost of \$923.73.

In 1906-7, the sum of \$1,097 was expended in re-opening 1,100 feet of this channel from 18 to 20 feet wide and 3 to 4 feet deep, which had filled up in the thirteen years since it was first dug.

In 1908-9, the sum of \$500 was expended in digging, by hand, a boat channel between Bell's island and Bushe's island and the mainland. The work was begun November 18, and completed November 24, 1908.

## L'ARDOISE.

L'Ardoise, Richmond county, is situated on the eastern side of St. Peter's bay, near its entrance from the Atlantic ocean, and about 9 miles to the eastward of the southern entrance to St. Peter's canal.



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An isolated breakwater, built in 1876-77, and almost destroyed in 1883, was reconstructed during 1891-2-3. It is 400 feet long and 20 feet wide on top, and consists of a timber core, placed over the remains of the original work, the whole being covered with stone, sloping three to one on the seaward face and outer end, and two to one on the inner side and inner end. The whole surface of the work, above low water mark, was covered with stone of not less than 15 cubic feet each, and the spaces between the stones, above the line of high water, were filled in with concrete.

Since the completion of the work, a concrete wall, 3 feet wide on top and  $4\frac{1}{2}$  feet in height, with top flush with the surface of the covering, has been constructed over the outer face and ends of the cribwork core.

In order to stop the undertow from sweeping into the harbour, through the gap between the inner end of the breakwater and the shore to the eastward of it, a distance of 1,195 feet, during 1903-4-5, a round timber structure, 1,145 feet in length, and a stone embankment, 50 feet long on top, were placed, filling in the gap completely.

Since 1900, slight disturbances of the stone covering of the breakwater had taken place yearly, until in the winter of 1904-5, when, during a furious gale, the heavy seas threw large masses of ice onto and against the structure and, dislodging the stone covering, cut several gaps through the top.

The sum of \$491.49 was expended during 1905-6; in closing up, temporarily, the most dangerous gaps in the top of the work.

The sum of \$5,000 was voted in 1906-7 to place the work in thorough repair, but owing to the shortness of the season, and the exposed position of the work, out of the amount voted, the sum of \$3,268.21 only could be expended during that year; the work was left in a safe condition.

During 1907-8, the sum of \$993.81 was expended in continuing the work commenced during 1906-7, and during the year ended March 31, 1909, the work was finally completed, at a cost of \$978.17.

The surface stone, down to low water, has been replaced, where necessary, and was carefully laid and packed as close together as possible; above the line of high water it has been laid in, and all the spaces between them filled in with cement concrete; and at the outer end, a concrete retaining wall 12 feet wide, 40 feet long, and of an average height of 7 feet, has been placed.

The work was commenced on September 9, and was completed on November 16, 1908.

## LITTLE BARACHOIS.

Little Barachois, Richmond county, is a harbour for boats on the western side of Madam island, about 3 miles from the town of Arichat.

During the fiscal year 1908-9, the sum of \$495 was expended in improving the entrance to the harbour, by excavating to 2 feet, at low water, in a channel, 300 feet in length and 40 feet in width.

Work was commenced September 23, and completed October 19.

## LITTLE BROOK.

Little Brook, Digby county, is situated on the thickly settled eastern shore of St. Mary's bay, Bay of Fundy,  $2\frac{1}{2}$  miles from Church Point, 33 miles south from Digby, and 36 miles north of Yarmouth.

In 1908-9, the sum of \$100.04 was expended in building a small block of cribwork, about 40 feet long, at the shore end of the breakwater, which had been partially broken down in a severe storm. The work was begun October 12, and completed October 20, 1908.

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## LITTLE HARBOUR.

Little Harbour, Pictou county, is on the Northumberland strait, about 5 miles east of the entrance to Pictou harbour.

Of the \$3,400 appropriated for expenditure in 1907-8, in the construction of a wharf near the head of Little harbour, the sum of \$1,545.89 was expended in procuring about three-quarters of the materials required in the construction of a block and span wharf.

During the fiscal year 1908-9, the sum of \$2,932.02 was expended in procuring the balance of materials required; in constructing a wharf, extending 297 feet to 2 feet at low water, and in placing stone around some of the inner blocks to prevent scour.

Work of construction was commenced August 3, and completed October 31.

The work of placing stone around the inner blocks was performed March 1 to 15.

## LITTLE NARROWS (NORTH).

Little Narrows, North, Inverness county, is on the north side of Little Narrows, a contraction of St. Patrick's channel, an arm of the Great Bras d'Or lake, at a point about 7 miles to the eastward of Wyeocomagh and 15 miles to the westward of the town of Baddeck.

Out of the amount voted towards the construction of a wharf, viz., \$1,000, up to March 31, 1909, the sum of \$140.38 was expended in procuring the native timber required for the top of the wharf.

## LITTLE RIVER HARBOUR.

Little River Harbour, Yarmouth county, is a small farming and fishing settlement of about 200 people, 12 miles southeast of Yarmouth.

In 1908-9, the sum of \$2,000 was expended in the construction of a public wharf. The work is 150 feet long, 20 feet wide and from 6 to 15 feet high.

The work was begun September 1, and suspended November 23, 1908, at which date it was completed, except the stone approach.

## LIVINGSTON'S COVE.

Livingston's Cove, Antigonish county, is on the southeastern shore of Northumberland strait, about 2 miles southwest from Cape George.

During the fiscal year ended March 31, 1909, the sum of \$444.99 was expended in re-bolting fender piles at outer corners of breakwater, in raising the talus on its seaward side by placing 275 cubic yards of quarried stone thereon, and in obtaining 50 yards of stone for future use. Spring tides rise  $4\frac{1}{2}$  feet.

Work was commenced on October 16, and completed October 24, 1908.

## LOWER JORDAN BAY.

Lower Jordan Bay is a scattered village of about 300 people, situated 5 miles southeast of Shelburne town, and on the western side of Jordan bay. Its people are largely engaged in fishing, and have been handicapped through not being able to get into their harbour except at the top of the tide. The department, during the last fiscal year, appropriated the sum of \$3,000 to open up a channel through the bar, so that the harbour would be accessible at all times of tide.

The work was begun on September 12, and ceased September 30, 1908; it consisted in opening a channel, 30 feet wide, 4 feet deep, for the entire width of the bar.

Amount of expenditure: \$2,381.94.

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## LOWER WOODS HARBOUR.

This work is also known as 'Clearing Channel at Cockawit Pass.' This pass is used by vessels coasting along the southern shore of Nova Scotia, and is a very important thoroughfare for that class of navigation. The only difficulty, in navigating this pass, was the presence in it of a number of large boulders, over which there was, at low tides, only about  $7\frac{1}{2}$  or 8 feet of water.

The work done during the last fiscal year consisted in the removal of these obstructions.

Tides rise 12 feet; neaps,  $8\frac{1}{2}$  feet.

Work was commenced August 28, and completed October 15, 1908.

## MABOU HARBOUR.

Mabou Harbour, Inverness county, is on the west side of Cape Breton island, 6 miles northeast from Port Hood.

The entrance was formerly at the southern extremity of a range of sand hills and by an intricate channel obstructed by a bar, over which there was a depth of only 4 feet at extreme low water.

The opening of a new channel through the sand hills, at their northern extremity, was undertaken in 1872. A pier, 835 feet in length, on the southern side of the new channel, was completed in 1876, and the same year the old channel was closed. Expenditures were made nearly every year from 1876 to 1902, in repairs to the pier, the construction of brush and stone work on the southern side, and of protection works on the northern side of the channel.

On the completion of repairs undertaken in 1901-2, the works included, viz.:—

On the south side, the remains of a pier, 835 feet in length and 20 feet in width, founded in about 12 feet at extreme low water, sloping from about 10 feet below extreme low water, at the face, to 2 feet above extreme low water at the back.

A work of brush and stone, of various widths, extending outwards from the outer end of the pier about 1,600 feet, the inner end of which was 8 feet above and the outer end 5 feet below low water.

Brush and stone work at the back of the pier, 800 feet in length, 10 to 12 feet in width, on top, and 7 feet in average height.

On the north side, five pile and brush groynes, four of which are from 75 to 85 feet in length, and one 45 feet.

In 1903, the minimum depth, at extreme low water, over the bar, about 600 feet outwards from the head of the pier, was 6 feet 3 inches. In July, 1906, the depth over the bar was increased to 16 feet, according to report on dredging for 1906-7. This depth had decreased to 13 feet in November, 1907, and to 9 feet in July, 1908.

During the fiscal year 1908-9, the sum of \$103,726.17 was expended, in raising the work, closing the former entrance with brush and stone, from 1 to 5 feet above high water, over a distance of 330 feet; in raising the brush and stone work on the southern side of the entrance; in repairs to the groynes on the northern side, and in placing some additional stone in the brush and stone work over the work, closing the former entrance.

Operations were commenced July 13, and completed October 17.

## LOWER WEST PUBNICO.

Lower West Pubnico, Yarmouth county, is a thriving and thickly populated district, situated on the west side of Pubnico harbour, from 30 to 35 miles southeast of Yarmouth. The people are engaged in fishing and farming.

Spring tides rise about 12 feet

In 1908-9, the sum of \$499.97 was expended in digging a boat channel through the mud flats which are dry at low water, from the end of the public wharf to the

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main channel. The channel is 1,000 feet long, 12 feet wide and of an average depth of 2 feet.

The work was begun on September 7, and finished on October 8, 1908.

#### MALIGNANT COVE.

Malignant Cove, Antigonish county, is situated on the southeastern shore of Northumberland Strait, about midway between Arisaig and Georgeville, and distant about 4 miles from each.

During the year 1908-9, the sum of \$3,989.31 was expended as follows:—

In procuring creosoted timber required for extension of piers, a distance of 30 feet.

In close-piling with creosoted timber, the channel face and outer end of western pier; in reconstructing the top of the outer end of the same pier, for a distance of 50 feet, and of another section, 60 feet in length, commencing at a point, 100 feet from its inner end; in the renewal of covering on outer end of eastern pier; and in placing brush and stone work along the outside of protection work, for a distance of 150 feet.

The work was commenced on July 25, and completed on November 30, 1908.

#### MANTHORN'S COVE.

Manthorns Cove (Seal Harbour), Guysborough county, is on the south or Atlantic coast of Nova Scotia, 2 miles to the eastward of the entrance to Isaac's harbour and about one-quarter of a mile to the eastward of a breakwater at Drum Head, constructed in 1903-4 and extended in 1906-7.

During the fiscal year 1908-9, the sum of \$500 was expended in improving the entrance to the cove by removing several large boulders, by means of a diver.

Operations were commenced October 27, and completed November 19.

#### MARGAREE HARBOUR.

Margaree Harbour, Inverness county, at the mouth of Margaree river, is on the west coast of Cape Breton Island, about 30 miles northeast of Port Hood. It had a narrow intricate channel through which the tide ran at the rate of four knots, and its entrance was obstructed by a bar of shifting sand, over which, there was at times, a depth of only 5 feet at extreme low water.

Expenditures have been made by the department in the construction and maintenance of channel protection and improvement works on the west side of the entrance, and in the construction of beach protection works on the east side.

In December, 1907, and during the fiscal year 1908-9, the sum of \$758.66 was expended in general repairs to the work, on the west side of the entrance, and in slight repairs to the pile and brush work, at the inner end of the shear dam.

Operations were in progress from December 9 to 19, 1907, and April 1 to June 15, June 9 to 23, 1908, and February 19 to March 15, 1909.

#### MARGAREE ISLAND.

Margaree Island, Inverness county, is situated in the Gulf of St. Lawrence, 2½ miles off the western coast of Cape Breton Island, and 27 miles northeast of Port Hood.

During the fiscal year 1908-9, the sum of \$371.92 was expended for the purchase, landing and taking delivery of creosoted timber, and for removing the creosoted timber to a safe place.

#### MARGAREE RIVER.

Margaree river, is a large stream on the west side of Cape Breton Island, flowing through extensive and fertile meadows to the Gulf of St. Lawrence.

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In 1907-8, the sum of \$735.44 was expended in procuring about one-half of the materials required in the construction of two shear dams, upper and lower, in the Ross-Ingraham settlement, estimated to cost, respectively, \$2,300 and \$1,200.

During the fiscal year 1908-9, \$2,290.24 was expended, in completing the upper and lower shear dams in the Ross Ingraham settlement for which part of materials required were procured in 1907-8, and \$497.59 in constructing works of brush and stone to protect the banks of the river at Doyle's Bridge and Deagle's Intervale, Margaree Forks.

Total expenditure to March 31, 1909, \$2,796.83.

## MARGARETVILLE.

Margaretville, Annapolis county, is the most important village on the south shore of the Bay of Fundy, between Digby Gut and Scott's Bay; it is 42 miles northeast from the former, 36 miles southwest from the latter, and 9 miles north of Middleton, an important station on the Dominion Atlantic Railway. It has a population of about 500 people engaged in fishing and farming.

A pier was begun in 1837 by the provincial government, and subsequently extended to a length of 471 feet. The work was taken over by the Public Works Department in 1871, since which time it has had frequent renewals and repairs, a full history of which will be found in the report of the department for the year 1907-8.

In 1908-9, the sum of \$2,581.13 was expended in building an extension to the eastern breakwater, 50 feet long, from 32 to 40 feet wide and from 22 to 25 feet high.

The work was begun on October 1, 1908, and completed March 31, 1909.

## MARTIN'S BROOK.

Martin's Brook, Lunenburg county, is a small fishing and farming settlement of about 20 families, situated on the west side of Mahone bay, at the head of Prince's inlet.

To enable boats to reach the mill at the head of the inlet, the department, in 1908-9, expended the sum of \$290.96 in digging a boat channel, about 300 feet long. Some 350 cubic yards of mud were removed.

The work was begun July 5, and completed August 31, 1908.

## MERIGOMISH STATION.

Merigomish Station, Pictou county, is on the Intercolonial Railway near the crossing of French river, a tidal stream emptying into the Gulf of St. Lawrence, 10 miles to the eastward of the entrance to Pictou harbour.

During the fiscal year 1908-9, the sum of \$340.25 was expended in constructing a small pile wharf, 30 feet in line of channel, with an inclined landing on the east side of French river, for the accommodation of boats coming to Merigomish Station for supplies.

The work was commenced September 12, and completed October 6.

## METEGHAN RIVER.

Meteghan river, Digby county, empties into the Bay of Fundy, at the mouth of St. Mary's bay, almost directly opposite Grand passage, between Long island and Brier island. The village, at the mouth of the river, is 20 miles south of Weymouth, 28 miles north of Yarmouth and 2½ miles north of Meteghan, or Meteghan cove. The population of the village is about 400 people, engaged in fishing, farming and lumbering. The nearest railway station, on the Dominion Atlantic Railway, which runs parallel with the bay shore, is about 4 miles from the village.

In 1908-9, the sum of \$3,000 was expended in building a new northern breakwater wharf. The work is substantially built of round log cribwork, and is 180 feet long, 21 feet wide and from 6 to 14 feet high. It was begun August 24, and completed November 30, 1908.

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## MIDDLE COUNTRY HARBOUR.

Country Harbour, Guysboro county, is on the Atlantic coast of Nova Scotia, 36 miles to the westward of Cape Canso. It has an excellent land-locked anchorage, in  $4\frac{1}{2}$  fathoms, 4 miles inland, and is navigable for large vessels  $6\frac{1}{2}$ , and for small vessels to Narrows Point,  $8\frac{1}{2}$  miles inland. Boats can ascend to the head of tide, 2 miles above Narrows Point.

During the fiscal year 1907-8, a contract, entered into on March 1, 1907, for the construction of a wharf at Middle Country Harbour, was completed, and the sum of \$143.90 was expended, by day labour, in grading and fencing the right of way thereto.

The wharf is a block and span structure,  $139\frac{1}{2}$  feet in length, consisting of a stone abutment, 21 feet in width, three central blocks, each about 22 feet 8 inches in width, and an outer block, 22 feet in line of work by 32 feet 4 inches. The depth at the outer end, at extreme low water, is 14 feet.

Spring tides rise 6 feet.

The sum of \$600 was authorized for expenditure in 1908-9 in the construction of a warehouse. A contract entered into June 19, 1908, for the construction of a warehouse, 30 by 20 feet, with platform, on the north side and near the inner end of the wharf, for the sum of \$585, was completed on August 17, 1908.

Work was commenced June 20, and completed August 17.

## MIDDLE RIVER (INDIAN BROOK).

Indian brook, Victoria county, is a large stream emptying into the Middle river, about 4 miles from its mouth, and about 1 mile below the shear-dam, constructed by the department at lower Middle river.

At a point on Indian brook, about one mile above its junction with the Middle river and immediately below the highway bridge, which crosses the brook here, some years ago, the brook left its old channel, which was comparatively straight, and, by cutting a new one through the intervalle, caused a considerable amount of damage.

It is proposed to construct a shear-dam, 280 feet in length, to deflect the brook back into its old channel, and thus to prevent further damage to the intervalle.

During the year ended March 31, 1909, the sum of \$532.56 was expended in procuring the necessary materials for the construction of the proposed dam.

## MIDDLE RIVER (LOWER).

Middle River, Victoria county, is a large stream, emptying into Indian bay, on the northern side of St. Patrick's channel, an arm of the Bras d'Or lakes.

About 5 miles from its mouth, the river flows through alluvial lands, easily acted upon by the strong currents, particularly during freshets, and, by opening new channels, caused great loss of valuable lands.

Since 1903, three shear dams were constructed along the river at this point, for the purpose of straightening and confining the course of the river, and the works proved successful as far as they went. At the end of the year 1907-8, the lower dam was 1,042 feet in length, the middle dam 120 feet, and the upper dam 600 feet.

Out of the amount voted for 1908-9, the sum of \$1,997.15 was expended in repairs to the lower dam, where it was undermined; in repairs to the upper dam, by the construction of a low dam, 400 feet in length, along the face of the upper end of the dam, to protect undermined portions and to prevent similar action, and in the extension of the upper dam down stream, for a distance of 200 feet. All dams consist of pile work, filled in solid with brush and stone, protected on the channel face with 3-inch plank close-sheathing.

The work was commenced on September 25, and completed on December 23, 1908.

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## MIDDLE RIVER (UPPER).

Upper Middle River, Victoria county, is a settlement on the Middle river, a large stream emptying into Indian bay, on the northern side of St. Patrick's channel, an arm of the Bras d'Or lakes, and is situated about 11 miles from and above the mouth of the river.

For the purpose of deflecting the course of the river above the foot bridge, where it threatened to leave the old, and cut a new channel through valuable intervale lands, during 1907-8, the sum of \$2,085.29 was expended in the construction of a shear dam, 400 feet in length, the inner 100 feet consisting of brush and stone, and the outer 300 feet, of three rows of pile work, 15 feet wide, filled in solidly with brush and stone and sheathed with plank on the channel face.

During the year ended March 31, 1909, the sum of \$99.99 was expended in placing ballast in the work, where it had settled.

The work was commenced on the 3rd, and completed on the 5th of November, 1908.

## MIDDLE WEST PUBNICO.

Middle West Pubnico, Yarmouth county, is a thriving fishing and farming settlement on the west side of Pubnico harbour, about 35 miles from Yarmouth.

In 1908-9 the department expended the sum of \$500 in digging a boat channel through the mud-flats, which were bare at low tide, from the head of the public wharf to the main channel. The work is 1,100 feet long, 15 feet wide and from 1 to 2 feet in depth. The work was begun September 1, and completed October 9, 1908.

## MINUDIE.

During the last fiscal year the sum of \$249.67 was expended in constructing a ferry slip. The slip runs out from the shore on the inside of the wharf, a distance of 80 feet, and is constructed in the shape of cribwork blocks, without ballast. It is 14 feet in width and has attached to it 36 empty casks, which keep it at the proper height.

Work was commenced August 16, and completed October 14, 1908.

Spring tides rise 40 feet; neaps, 30 feet.

## MIRA RIVER.

The Mira river, Cape Breton county, is a large stream flowing into Mira bay, a bay on the east coast of Cape Breton island, between Cow Bay and Louisburg harbour. It discharges the waters of Mira lake and Salmon river, and is the outlet of an interior navigation of about 20 miles; but the ordinary depth over the bar, at its entrance into the bay, is only 4 feet and seldom exceeds 8 feet, except in extraordinary spring tides. Two miles above the entrance, the river expands into a lake of varying widths. It is crossed by the Sydney and Louisburg Railway bridge, and by a highway bridge near the entrance, by the Albert and Marion highway bridges, respectively  $5\frac{1}{2}$  and  $13\frac{1}{2}$  miles from the entrance, and by the Victoria bridge at the head of navigation,  $25\frac{1}{2}$  miles inland. These, with the exception of the Victoria bridge, are draw bridges. During the summer season, several small steamers are engaged in passenger and freight traffic, landing being effected at small and inconvenient wharfs near the Albert, Marion and Victoria bridges.

The sum of \$1,150 was appropriated for expenditure in 1908-9 in the construction of a wharf.

In February and March, the sum of \$414.54 was expended in procuring all the timber (with the exception of covering) required in the construction of a wharf, on the east side of the river, at Grand Mira, known locally as Grand Mira South,  $3\frac{1}{2}$  miles below Victoria bridge. The work proposed is a block and span structure, extending 75 feet from high water to 8 feet at low water, the depth required for small steamers and sailing vessels.

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## MONK'S HEAD.

Monk's Head, Antigonish county, is on the southern shore of St. George's bay, between the harbours of Antigonish and Pomquet. A large sheet of water, to the westward of Monk's Head, known as Dunn's lake, is separated from the bay by a beach of shingle, and, from Antigonish harbour, by a neck of marsh land.

In 1894-5, a channel for boats was opened between Dunn's lake and Antigonish harbour, and a highway bridge was constructed over its western entrance. Subsequently the bridge and its abutments were reconstructed and protection works of brush, stones and piles were constructed, extending from the bridge inwards, on the northern side 215 feet and on the southern side 240 feet. The channel is 700 feet in length and has a minimum depth of one foot, at extreme low water. Spring tides rise 4 feet.

In 1904-5, the sum of \$179.78, was expended in repairs to the bridge, including removing and replacing the super-structure and reconstructing the faces of the brush and stone abutments.

During the fiscal year 1908-9, the sum of \$341.20 was expended in renewing the covering and railing of the bridge and in constructing 150 feet of the retaining wall of the canal.

Work was commenced October 3, and completed October 30, 1908.

## MORDEN.

Morden, Kings county, formerly called French Cross, is a small fishing and farming village of about 150 people, situated on the south shore of the Bay of Fundy, 50 miles northwest of Digby Gut, and 9 miles from Aylesford Station on the Dominion Atlantic Railway.

In 1908-9, the sum of \$263.80 was expended in repairing and renewing a portion of the covering plank of the breakwater and in the purchase of timber for further repairs and renewals, in 1909-10.

Work was begun April 16 and completed April 23, 1908.

## MORRISON'S COVE (WRECK COVE).

Wreck Cove, Victoria, is situated on that part of the northeastern coast of the island of Cape Breton, called the 'North Shore,' between the harbours of St. Ann's and South Ingonish, and is distant 12 miles from the latter.

During 1908-9, the sum of \$199.99 was expended in improving the boat landing by the removal of a large number of boulders, which rendered the hauling up and the launching of fishing boats very inconvenient and often dangerous, off the beach, and in building, with them, a wall in front of the fish houses to protect them from the wash of the seas.

The work was commenced on November 16, and completed on December 30, 1908.

## MC NAIR'S COVE.

McNair's Cove, Antigonish county, is on the west side of St. George's bay, about 2 miles to the southward of Cape George.

A breakwater, 400 feet in length and 20 feet in width was built on the north side of the cove during 1872-73-74, and in 1878 a length of 20 feet was added thereto. In 1878, the work was carried away by drift ice to within 100 feet of the shore end, down to from 3 to 6 feet below low water. During the summer of 1883, 70 feet of the shore end was rebuilt, and during the winter of 1884, the work was extended 94 feet, but this extension was badly damaged by drift ice in April, 1885, and was subsequently carried away.



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During 1886-87-88, the bottom of the damaged work was dredged out, and a new work, 160 feet in length, 34 feet wide on top, with a sloping face on the seaward side, was constructed, and, on its completion, the total length of the breakwater was 330 feet.

The work was constructed entirely of native timber, and as it became weakened by the action of the teredo, during the years 1890-1-2-3-4, the outer end, and on each side of it for a distance of 20 feet, was protected by creosoted timber close piling, and its seaward face, by a talus of quarried stone.

During the years 1897-1901, the timber wall under the sloping face, which was destroyed by the teredo, was reconstructed down to low water and close fendered with hardwood timber; the stone talus was raised up to the top of the close fendering, and the work was rebalasted and re-covered where necessary.

During 1901-2-3, the inner end of the work which was constructed partly in 1872 and partly in 1883, and was only 20 feet wide, was for a distance of 120 feet, widened to 30 feet, and the old top was cut down to low water and re-constructed with new materials.

During 1903-4, an extension of 80 feet long and 32 feet wide, placed across the outer end of the old work forming an 'L,' 40 feet in length, was constructed, as a protection to the old work, and to improve the sheltered area behind the breakwater. The work is constructed of round timber, creosoted to half tide, fully ballasted and fendered and it is protected on all outer faces with close sheathing.

In the fiscal period ended March 31, 1907, the sum of \$244.58 was expended in placing some stone in the talus; in rebalasting the work in places, and in the renewal of a few pieces of covering.

The sum of \$2,700 was voted for expenditure during 1907-8, for the reconstruction of the seaward face of the work, from low water mark up, 16 feet wide and 80 feet in length, with creosoted timber bottom; to close-sheathe the new face, and to raise the talus outside to high water mark.

Up to the end of the year 1907-8, out of the amount granted, the sum of \$2,312.62 was expended in procuring all the necessary materials required for the work and in temporary repairs, but on account of the late delivery of the creosoted timber, the work intended was not completed.

The sum of \$4,800 was voted for expenditure during 1908-9 as follows:—

\$1,800 for the reconstruction of the top of the outer end of the old breakwater and \$3,000 towards a further extension.

Of the amount voted for repairs, the sum of \$1,809.75 was expended in the reconstruction of the outer end of the seaward face of the old work, from 2 feet below low water up, 16 feet in width, and for a distance of 80 feet, with creosoted timber to half tide; in close sheathing the new face and in raising the talus, in front of it to high water mark, by placing some 475 cubic yards of heavy quarried stone upon it.

No part of the amount granted towards the extension of the pier was expended, but the necessary creosoted timber has been ordered.

The repairs were commenced on September 2, 1908, and completed on March 23, 1909.

## NECUM TEUCH.

Necum Teuch (pronounced 'Necumtau'), Halifax county, is the name given to a settlement lying on the east side of Necum Teuch bay, at the mouth of Moser's river. It is 68 miles in an air line E.N.E. from Halifax, and 6 miles from Salmon river. The population of the place embraces about 400 people, engaged in farming and lumbering.

In 1908-9, the sum of \$477.50 was expended in building an 'L' to the public wharf. It consists of a block of cribwork, 30 feet long, 20 feet wide and 18 feet high, besides a span of 10 feet connecting it with the rest of the wharf.

The work was begun August 1, and completed September 5, 1908.

Spring tides rise 6 feet; neaps, 5 feet.

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## NEIL'S HARBOUR.

Neil's Harbour, Victoria county, is situated on the eastern coast of Cape Breton island, about midway between Ingonish and Aspy bays.

During the year ended March 31, 1909, the sum of \$778.76 was expended in raising the talus on the seaward side of the breakwater to high water mark, filling in the spaces between the stones with concrete, and in filling in, with large stones laid in cement, a space about 20 feet wide, between reefs to the eastward of the inner end of the breakwater, where the sea, at high water, during storms from the eastward rolled in with great force and striking the seaward face of the work, disturbed the stone in the talus; and a lot of stone, which had been washed over the work by the sea and deposited inside, was removed by divers and placed again on the talus.

The work was commenced on October 19, and was completed on December 5, 1908.

## NEW GLASGOW.

New Glasgow, Pictou county, is an important manufacturing town and business centre on the Intercolonial Railway and at the head of navigation, in the east river of Pictou.

A contract was entered into on March 12, 1908, for the construction of a 200-foot cribwork extension of a wharf in New Glasgow, under the control of a harbour commission, for the sum of \$3,999.

The work under contract was commenced June 4, and completed September 30, 1908.

## NOEL.

Noel, Hants county, has a population of about 500, and is situated on the south shore of Cobequid bay, the extreme eastern arm of the Bay of Fundy. It is 13 miles west of Maitland, and 32 miles northwest of Shubenacadie, the nearest railway station on the Intercolonial railway. It is at this date, almost exclusively a farming district, the export of timber and the building of wooden ships, which some years ago were important industries, having practically ceased.

In 1908-9, the sum of \$1,977.08 was expended in building an extension to the pile-wharf, 60 feet long and 40 feet wide, along the west side, and 60 feet long and 10 feet wide, on the northern face or outer end of the work.

Work was begun on October 8, and suspended December 23, 1908.

Spring tides rise 50½ feet; neaps, 43½ feet.

## NORTH RIVER.

North river empties into the northern arm of St. Ann's harbour, on the eastern coast of the island of Cape Breton.

A wharf was constructed by the department during 1898-9-1900, at Seymour point, on the northern side of the mouth of North river. It extends to 9 feet at low water, and it consists of a road approach, 64 feet long and 16 feet wide; of a block and span work, 63 feet long and 20 feet wide, and of a creosoted timber pile extension, 175 feet long and 20 feet wide, with an 'L' 20 by 20 feet, at its outer end.

As the top of the wharf was getting weak, through wear and natural decay, during 1908-9 the sum of \$968.53 was expended in the renewal of a portion of the floor stringers and the whole of the plank covering, the cap and the chocks between the heads of fender piles.

The work was commenced on November 16, 1908, and completed on January 23, 1909.

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## NORTH SHORE, ST. ANN'S.

The North shore, Victoria county, so called, is that portion of the northeast coast of the island of Cape Breton which lies between St. Ann's harbour and Cape Smoky.

The boat landing at Roderick McLeod's is situated at the southern end of Wreck Cove, about 8 miles to the southward of Cape Smoky, and, as the bench there offers better landing facilities than at other points in the neighbourhood, it has been used for many years by the fishermen of the district as a landing for their boats.

During the year 1908-9, the sum of \$99.95 was expended in the removal of some forty large boulders which interfered with the landing of the boats, and in piling up the boulders on the northern side of the landing place, so as to partially break the sea from that quarter.

The work was commenced on November 5, and completed on November 16, 1908.

## OSBORNE.

Osborne is a small town of about 150 people, situated a mile and a half to the northeast of Lockeport. The people here are largely engaged in fishing and farming, and have had, for their accommodation, a small wharf, which was built about thirty-five or forty years ago by the provincial government. This wharf had thoroughly decayed, and, during the last fiscal year, the sum of \$1,400 was granted towards its reconstruction and extension. Work was begun on September 17, and completed on November 26, 1908, during which period the sum of \$1,308.61 was expended.

The work done consisted in the tearing down of the old wharf, and the construction of a new one, which is composed of two blocks of cribwork about 12 feet high and 20 feet wide, separated from each other by a span 18 feet long; of 100 feet of pile trestle work, and of a stone bank approach, 80 feet long and about 4 feet high.

Spring tide rises here 6 feet; neaps,  $4\frac{1}{2}$  feet.

## OWL'S HEAD.

Owl's Head, Halifax county, is a fishing settlement on the Atlantic coast, immediately west of the entrance of Ship harbour, 50 miles east of the city of Halifax. The population of the place within a radius of a mile is about 300 people, dependent almost wholly on the fisheries. The value of the annual catch is about \$17,000.

In 1908-9, the sum of \$1,947.58 was expended in the partial construction of a public wharf and in the purchase of timber for its completion.

## OYSTER POND.

Oyster Pond, Guysboro county, is one of several large ponds on the north shore of Chedabucto bay, which form the only boat harbours between Cape Argos, on the western side of the southern entrance to the Strait of Canso, and Guysboro harbour, a distance of 15 miles.

During the fiscal year 1908-9, the sum of \$3,337.44 was expended in procuring the balance of materials required; in completing the 100-foot extension of the eastern breakwater, in progress in 1907-8, and in procuring nearly all the timber and the iron required in the construction of a proposed breakwater, 312 feet in length, on the western side and immediately opposite the entrance.

## PARKER'S COVE.

Parker's Cove, Annapolis county, is a small indentation on the southeast coast of the Bay of Fundy, 15 miles northwest of Digby Gut, and 7 miles north of Annapolis, 19—iv--3½

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the county town. The population of the settlement is about 250, engaged in fishing and farming.

Spring tides rise 30 feet.

In 1908-9, the sum of \$955.98 was expended in the purchase of timber for the construction of a breakwater on the western side of the mouth of the harbour.

#### PARRSBORO.

Parrsboro is a town of nearly 3,000 people, situated on the Cumberland Basin, about 25 miles from the town of Springhill. About thirty-five millions of lumber is annually shipped from this port, while it is also the shipping port for the Cumberland Coal and Railway Company, whose annual output is now approaching 500,000 tons of coal. Besides this, it is surrounded by quite a large tract of farming land, the produce of which forms a considerable item.

The sum expended here amounted to \$7,568.

Work was begun here August 10, 1908, and completed March 30, 1909; it consisted in renewing 30 feet in length of the top of the work, 350 feet in length of the inside guard-rail, 20 pieces of sheathing on the outside of the work, and brushing the foundation for about 40 feet in length on the outside.

Spring tides rise here about 35 feet; neaps, 29 feet.

#### PEREAUX.

Pereaux, Kings county is a rich and prosperous agricultural district, with a population of some 300 to 400, situated on the west side of the Basin of Minas, 3 miles north of Kingsport, and 5 miles south of Cape Blomidon. From Kingsport to Cape Blomidon is a thickly settled and fertile agricultural district.

In 1908-9, the sum of \$89.28 was expended in completing the work. It consists of a block and span wharf 160 feet long, 20 feet wide on top and from 12 to 20 feet high. There are eight blocks of cribwork and seven spans, the blocks being 10 by 10 feet on top, except the outer one, which is 30 by 10 feet. The blocks batter 2 inches to the foot all around as a safeguard against lifting by ice.

The work was begun April 25, and completed April 28, 1908.

#### PETITE RIVIERE.

Petite Riviere, Lunenburg county, is the centre of a thriving farming and lumbering district, situated about 12 miles southwest of the town of Bridgewater, and 6 miles west of the La Have river. The village, which has a population of about 500, is situated at the mouth of a small river, from which it takes its name. The nearest railway station is 6 miles, and the nearest harbour, at La Have, 6 miles distant.

In 1908-9, the sum of \$456.14 was expended in repairs to the covering of the breakwater, which had been damaged by ice and heavy seas.

The work was begun September 1, and completed November 15, 1908.

Spring tides rise 6 feet; neaps, 5 feet.

#### PETITE RIVIERE (CROUSETOWN).

Petite Riviere (Crousetown), Lunenburg county, is a farming and lumbering settlement of about 100 people, situated upon the river, about 3 miles above the village of Petite Riviere proper.

In 1908-9, the sum of \$150.51 was expended in removing some rocks from the bed of the river at a point about 3 miles above the breakwater.

The work was begun September 19, and completed September 30, 1908.

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## PICTOU ISLAND.

Pictou Island, Pictou county, is situated in the Strait of Cumberland, about 10 miles northeast of the entrance to Pictou harbour.

Of the \$5,000 appropriated for reconstructing and extending the outer 60 feet of the east wharf, the sum of \$821.90 was expended in February in procuring part of the native timber and iron required in the construction of a proposed 104-foot block, with creosoted substructure.

## PLEASANT HARBOUR.

Pleasant Harbour, Halifax county, is a well sheltered harbour or bay, situated 3 miles west of Tangier, 4 miles east of the mouth of Ship Harbour and about 48 miles in an air line east of Halifax. It embraces a scattered population of about 200, engaged in fishing and farming.

In 1908-9, the sum of \$740.74 was expended in beginning the construction of a public wharf and in the purchase of timber for its completion.

## POIRIERVILLE.

Poirierville, Richmond county, commonly known as Lower D'Escousse, is a settlement on the northeastern coast of Madame island, on the southern side of the eastern entrance of Lennox passage, a strait separating the island from Cape Breton island.

On September 19, 1906, a contract was entered into, in the sum of \$7,575, for the construction of a public wharf, but owing to delay in the delivery of the creosoted timber required, the work of construction was not commenced until September 24, 1907, and continued to November 30, 1907, when it was suspended for the season; on that date the blocks were all constructed up to the required height and fully ballasted, and about one-half of the floor stringers were placed on the blocks and across the spans.

The work was again resumed on June 1, 1908, and was brought to completion on September 12.

The wharf extends to 10 feet at low water and is 340 feet long, 20 feet wide, with an 'L' on the southern side of the outer end, 20 by 20 feet, and consists of crib-work blocks and spans, the blocks being built of round timber with creosoted timber sub-structure; as a protection against ice, the faces of the outer block and the seaward faces and outer ends of the two blocks next to the end block, have been close-sheathed.

## PORTER'S LAKE.

Porter's lake, Halifax county, is a long, narrow strip of fresh water, lying nearly north and south and situated about the middle of Halifax county, or about 15 miles east of the provincial capital. It is about 18 miles in length, from a quarter to half a mile wide, and, the water being of good depth for almost its entire length, it is navigable for vessels of 60 tons to its extreme head. The normal level of the lake is some 2 or 3 inches above H.W.O.S.T.

In 1908-9, the sum of \$801.86 was spent in re-opening the old outlet, and in making a new experimental outlet through Half Island beach. This has not proved a success, owing to the great exposure of the beach and the filling up of the outlet by sand and gravel after every heavy storm. \$1,484.52 was expended in further deepening the permanent outlet.

## PORT DUFFERIN.

Port Dufferin, Halifax county, formerly called Salmon River, is a thrifty village of from 500 to 600 people, engaged in fishing, lobster-canning and gold mining;

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situated at the head of Salmon river, that empties into the inlet known as Beaver harbour, about 85 miles east from Halifax by high road and about half way between Halifax harbour and Canso.

In 1903-9, the department expended the sum of \$452.12 in the purchase of timber for the construction of a breakwater at Smiley's Point, about a mile below the public wharf.

#### PORT GREVILLE.

Port Greville is a village of about 350 people, situated 12 miles west of Parrsboro. Important shipbuilding and lumbering interests are located here, which are mainly dependent upon the security of the harbour.

During the last fiscal year, the sum of \$995.67 was expended in effecting the necessary repairs to the breakwater. About 60 feet in length of the work was torn apart and rebuilt; 1,000 feet of covering on the old work was replaced; new fenders were added and where the work was undermined, for a length of about 80 feet, brush work was placed in position, and the whole inner face, for a distance of 110 feet, was close-piled, so as to prevent undermining.

Work was commenced August 10, and completed in October, 1903.

Spring tides rise here about 37 feet; neaps, 30 feet.

#### PORT HAWKESBURY.

Port Hawkesbury, Inverness county, is on the eastern side of the Strait of Canso, nearly opposite Port Mulgrave.

During the fiscal year 1908-9, the sum of \$148.36 was expended in reconstructing top of chimney and in painting west side of the roof of the outer warehouse; in painting both sides of the roof of inner warehouse; in renewing the sheathing of the outer corners of the wharf, and in levelling up the floor stringers and covering of the approach.

Operations were in progress December 7 to 24, and March 15 to 29.

#### PORT HILFORD.

Port Hilford, Guysborough county, is at the head of Indian bay on the southern or Atlantic coast of Nova Scotia 5 miles to the eastward of the mouth of St Mary's river.

During the fiscal year 1908-9, \$5,836.53 of the \$7,000 appropriated, was expended in procuring the creosoted and native timber required and in constructing a block at the outer end of the breakwater, 41 feet in length (across outer end of 'L') and 27 feet in average width; and in extending the close sheathing on the inner side 161½ feet inwards.

The new outer end block is of open-faced cribwork, with creosoted sub-structure, fully ballasted, and close fendered at the ends and outer face. Depth at outer face, 13½ feet at low water. Spring tides rise 6 feet.

Operations were in progress July 16, to January 16, and March 1, to 24.

#### PORT HOOD HARBOUR.

The harbour of Port Hood, Inverness county, is on the east coast of Cape Breton Island, about 20 miles to the northward of the northern entrance to the Strait of Canso.

The harbour was formerly a secure one; Smith island which forms its west side, having been connected with the mainland by a beach of sand. In 1839, the sea made a breach through the beach; the opening, at first narrow, was enlarged by the tidal currents with increasing rapidity until it was entirely swept away. The harbour is now unsafe during northerly gales, except in a small cove on the east side of Smith island.

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In March, 1902, a report was submitted on the closing of the northern entrance, in which the estimated cost of work suggested varied from \$482,000 to \$291,000, according to design and location.

The amount appropriated for 1903-4 (\$20,000) was for expenditure by day labour, in constructing a portion of a breakwater of brush and stone with stone talus and covering. Operations were commenced in May and were in progress at the close of the fiscal year ended June 30, when the expenditure amounted to \$2,968.85. This sum was expended in procuring materials and in constructing a work of brush and stone, 28 feet in width, on top, at high water level, extending from the mainland 330 feet to 3 feet at extreme low water.

In 1904-5, the sum of \$19,942.43 was expended in extending the brush and stone work 470 feet, (800 feet from the mainland) to 6 feet at extreme low water, and in placing a talus on both sides and a covering of quarried stone.

Of the amount appropriated for 1905-6, the sum of \$9,999.91 was expended, \$2,984 in March and April in procuring materials, and the balance in July, August and September in extending the brush and stone work 185 feet (988 feet from the inner end) to 9½ feet at extreme low water, and in placing a talus on both sides and a covering of quarried stone.

During the fiscal year of nine months ended March 31, 1907, the sum of \$15,000.38 was expended in June, July and August, in extending the brush and stone work 309 feet (988 to 1,297 feet from the inner end); of the 309 feet, the inner 60 feet was completed up to 2 feet above high water and protected with quarried stone on each side and on top, 191 feet was up to within 1½ feet of low water with quarried stone on the seaward side, and 58 feet of the outer brush and stone work was up to 5 feet below low water. There was also expended in August, September and October, the additional sum of \$1,814.77, in placing quarried stone over the 249 feet of work, left unprotected.

Of the \$15,000, appropriated for 1907-8, the sum of \$14,999.37 was expended in completing the 249 feet of work left unfinished in 1906-7, in procuring quarried stone for work in 1908-09, and in purchasing a donkey engine and round timber to be used in the construction of derricks.

During the fiscal year 1908-9, \$14,999.98, of the \$15,000, appropriated, was expended and an additional expenditure of \$663.36 was incurred, in extending the brush and stone work 363 feet, or from 1,297 to 1,660 feet from the inner end, and in placing a single brush mattress 60 feet in length at the outer end. Of the 363 feet, the inner 303 feet was completed, including slopes up to 2 feet above high water, and the outer 60 feet was left sloping from 2 feet above high water, and the inner end, to 10 feet below high water, or to 6 feet below low water, at the outer end, the depth at the outer end at low water being about 14 feet.

## PORT HOOD WHARF.

Port Hood, the shiretown of Inverness county, is on the west coast of Cape Breton Island, 20 miles north of the northern entrance to the Strait of Canso.

During the fiscal year 1908-09, the sum of \$1,199.96 was expended on the pier in renewing some ballast, the floor stringers and covering of part of the 'L' 50 feet in width and 80 feet in length, from inner end of 'L' outwards, and in general repairs to 30 feet of the seaward face near the outer end.

Work was commenced August 1, and completed October 30.

## PORT LATOUR (UPPER).

Port Latour, Shelburne county, is a fishing and farming settlement, situated 25 miles southwest of Shelburne town.

During last fiscal year, work was commenced September 16, and was finished November 26, 1908, at a cost of \$511.12. The work done consists in completing a

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blocking and a span, at the head of the wharf, in replacing about six fenders, five stringers, four guard rails, and in constructing a small freight shed, 24 by 15 feet.

Spring tides rise here about 10 feet; neaps, 7½.

## PORT LORNE.

Port Lorne, Annapolis county, formerly called Port Williams or Marshalls Cove, is situated on the Bay of Fundy, 32 miles northeast of Digby Gut, and 6 miles northeast from Paradise Station, on the Dominion Atlantic Railway. The settlement comprises about 300 people, engaged in fishing and farming.

In 1908-9, the sum of \$2,958.86 was expended in the construction of a new breakwater on the east side of the little harbour. The work is 140 feet long, 25 feet wide and from 7 to 15 feet high.

Work was begun on September 15, and suspended on December 31, 1908.

## PORT MAITLAND.

Port Maitland, Yarmouth county, is a prosperous and important fishing and farming village, with a population of about 600, situated on the southeast side of the mouth of the Bay of Fundy, 12 miles north of the county town of Yarmouth.

In 1908-9, the sum of \$1,840.54 was expended in repairs to the covering of the outer end of the breakwater; in constructing a new inclined boat-slip on the inner side of the shore end of the work, and in the purchase of timber for the construction of a new re-enforcing block along the outer face of the 'L.'

The work was begun on May 6, and suspended on November 27, 1908.

Spring tides rise 18 feet; neaps, 15 feet.

This work was transferred to the control of the Department of Marine and Fisheries on June 22, 1885.

## PORT ROYAL.

Port Royal, Richmond county, is a settlement on the western side of Madame island, about 2½ miles to the northward of West Arichat, and on the northern side of the eastern end of Leblanc harbour.

On March 23, 1908, a contract was entered into, in the sum of \$4,775, for the construction of a wharf.

The work of construction was commenced on July 9, 1908, and was completed on September 14 following.

The wharf extends to 8 feet at low water, or to 14 feet at high water, and is a block and span structure, 177 feet long and 18 feet wide, with an 'L' on the eastern side of the outer end, 18 by 18 feet; it consists of an approach of stone and clay, 37 feet long, of three cribwork blocks, 18 feet long, and of an outer block 18 by 36 feet, with openings between them 17 feet long. The blocks are constructed of round timber, laid open faced, with creosoted timber sub-structure, properly ballasted, fendered and covered, and the three outer faces of the outer block are close-sheathed between the fenders. Spring tides rise 6 feet; neaps, 4 feet.

Total expenditure during last fiscal year, \$4,916.35.

## PORTUGUESE COVE.

Portuguese Cove, Halifax county, is a small fishing village with a population of about 600, situated 6 miles from Halifax, on the western side of the mouth of the harbour.

In 1908-9, the sum of \$10,000 was expended in the construction, by contract, of a breakwater for the protection of the fishing fleet. The work is of substantial round-log cribwork, close-sheathed and provided on the seaward side with a break,



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217 feet in total length, the shoreward 117 feet being 20 feet wide and the outer 100 feet, 30 feet wide. At the outer end, the work is 21 feet high.

Work was begun May 26, and completed July 20, 1908.

Spring tides rise 6 feet; neaps, 5 feet.

## PUBNICO HEAD.

Pubnico Head is situated in the extreme west of Yarmouth county, about 20 miles southeast from the county town. The harbour is 8 miles long, north and south, by three-quarters of a mile to one and a half miles wide. At the extreme head is a settlement of some 500 or 600 people engaged in farming, lumbering and fishing.

In 1908-9, the sum of \$490.88 was expended in the renewal of the whole top of the wharf, consisting of stringers, guard-timbers, planking and mooring posts. The work was begun on October 14, and completed November 29, 1908.

Spring tides rise 10 feet.

## PUGWASH.

Pugwash is a town of about 1,000 people, situated on the straits of Northumberland, about 8 miles from Wallace harbour. It is a large shipping port, particularly of lumber, the output of which at this place during the last eight years has averaged about twenty-two millions.

In order to render the shipping facilities more favourable, it was deemed advisable, both by the railway authorities and the department, that the siding should be a level one, and therefore the wharfs had to be raised 5 and 6 feet in height respectively.

Work was commenced on October 6, 1908, and continued until January 30, 1909, and the sum of \$4,498.44 was expended. The new wharf, which is 320 feet long, was raised 6 feet in height and a large portion of the material for the old wharf was secured.

Spring tides rise 6½ feet; neaps, 5 feet.

## QUODDY ISLAND.

Quoddy Island, Halifax county, is situated on the west side of Harrigan Cove, about 100 miles east of Halifax, and 4 miles east of Port Dufferin. Within a radius of two miles, there is a population of about 100.

In order to provide a landing pier for the little steamer which plies between Halifax and eastern ports, the department, in 1908-9, expended the sum of \$901.77 in the partial construction of a public wharf.

Work was begun on October 14, and suspended on November 12, 1908.

Spring tides rise about 6 feet.

## RABBIT ISLAND.

Rabbit island, Richmond county, is on the northern side of the western entrance into Lennox passage, and on the eastern side of the entrance to Inhabitants bay.

The island, being near the fishing grounds, is an important fishing station, and, for the purpose of affording boats better and safer protection during gales from the westward, and to permit of larger boats being used in the fisheries, the sum of \$4,000 was voted for expenditure, during 1907-8, on the construction of a breakwater, but beyond obtaining the necessary timber, nothing was done during that year and, out of the amount voted, the sum of \$1,058.14 only was expended.

During 1908-9, the sum of \$3,266.31 was expended in the construction of the breakwater, for which the timber was obtained during the previous year.

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The breakwater is 180 feet long and 20 feet wide, extending to 8 feet at low water; it is a continuous round native timber cribwork structure, fully ballasted and close-sheathed on the seaward face and outer end.

Construction was commenced on August 29, and completed on November 27, 1903.

## RAY'S CREEK.

Ray's Creek, Annapolis county (Upper Granville), is a thickly settled and very rich farming district, situated on the north bank of the Annapolis river, some 4 miles below Bridgetown, and about 10 miles above Annapolis. Within a radius of 3 miles, there is a population of 800 to 1,000.

Spring tides rise about 30 feet.

In 1908-9, the sum of \$39.59 was expended in the removal of a number of boulders from the river bottom, close to the public wharf.

Work was begun on August 24, and completed September 4, 1908.

## ROUND HILL.

Round Hill, Annapolis county, is a thickly settled and very prosperous farming district, situated about 8 miles east of the town of Annapolis. There is a station on the Dominion Atlantic Railway. The village, with a population of about 500, is situated from a quarter of a mile to half a mile south of the Annapolis river, which is navigable at high water for large vessels up as far as Bridgetown, some 7 miles farther up.

Some thirty years ago, a small wharf of cribwork was built by private enterprise but it fell into disuse some fifteen years ago. At the present time, all that remains of it consists of a few logs and a little pile of ballast.

For the benefit of local trade, the department, in 1905-6, expended the sum of \$2,000.14 in the construction of a public wharf. It consists of a pile-work stem, 76 feet long by 25 feet wide, from 5 to 16 feet high, terminating in a substantial block of cribwork, 75 feet long, 35 feet wide and from 16 to 22 feet high, founded on piles driven to hard bottom and cut off level with the mud. Along the face of the wharf, at high water, there is about 16 feet of water.

In 1906-7, the sum of \$1,997.41 was expended in continuing the work begun the previous year.

In 1907-8, the sum of \$1,095 was expended in continuing the work, which, at the close of the fiscal year, was not quite completed.

In 1908-9, the sum of \$323.05 was expended in finishing the covering and ballasting of the wharf, which, at this date, is completely finished.

The work was begun September 9, and finished September 22, 1908.

## ST. MARY'S RIVER.

St. Mary's river, Guysboro county, is a fine stream, 65 miles in length, traversing valuable timber lands and discharging into the Atlantic ocean about 48 miles to the westward of Cape Canso. The depth at extreme low water in a channel dredged through a bar at the entrance, in 1900-1, is about 14 feet, thence in a narrow and tortuous channel to within half a mile of the village of Sherbrooke, which is at the head of tide, 8 miles inland, from 18 to 12 feet. Spring tides rise 6 feet.

In 1907-8, the sum of \$495.47 was expended in improving the channel, by removing part of a reef, just within the entrance, and some boulders near the head of navigation.

During the fiscal year 1908-9, the sum of \$507.30 was expended in nearly completing the removal of obstructions undertaken in 1907-8. Ten boulders in the narrows, below the Sherbrooke Milling Company's wharf were removed, and six large

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boulders in the channel, opposite the Scotia Lumber Company's wharf, were broken up, to be removed by one of the departmental dredges.

Operations were commenced September 28, and suspended October 20.

## SANDFORD.

Sandford (Cranberry Head) is situated on the Atlantic coast of Nova Scotia, at the extreme western point of Yarmouth county, 7 miles northwest from the town of Yarmouth. The settlement in the neighbourhood, which has for some years been known as Sandford, has a population of from 300 to 400, engaged in fishing and farming.

In 1858, a breakwater was begun by the inhabitants, aided by the provincial government. In 1876, the sum of \$2,000 was expended by the department in extending the work 150 feet. In 1878-9, the sum of \$1,000.08 was spent in constructing an additional length of 50 feet and in repairing the older portions.

In 1880 and since, this department has incurred large expenditures in maintaining and improving the works. (For details see annual report of 1905-6.)

In 1907-8, the sum of \$200 was expended in sheathing and fendering a space of about 30 feet in length on the seaward face of the breakwater, which could not be done when the work was built in 1902-3, owing to a portion of the ancient block abutting the new work. The old block has been so far demolished by the sea as to make the sheathing possible.

During the last fiscal year, the sum of \$104.67 was expended in completing the cribwork begun two years ago, which at this date, is completely finished.

The work was begun October 8, and completed October 19, 1908.

## SAULNIERVILLE.

Saulnierville, Digby county, with a population of about 350, is situated on the northeast coast of St. Mary's bay, Bay of Fundy, 36 miles southeast of Digby, 32 miles north of Yarmouth and 3 miles north of Meteghan river.

In 1908-9, the department expended the sum of \$1,499.69 in repairs and renewals. On the seaward side of the breakwater, a piece, 90 feet long, 18 feet wide and 18 feet high, being thoroughly dilapidated, was taken down and rebuilt. Other general repairs were made to the rest of the work and some few boulders were removed from the berth alongside and at the outer end.

The work was begun on September 1, 1908, and completed February 26, 1909.

At low water, the sands are bare for several hundred feet beyond the end of the work.

## SCOTIA COVE (WHITE POINT).

Scotia Cove, Victoria county, forms the southeastern part of Aspy bay, on the northeastern side of Cape Breton island, and is about  $\frac{3}{4}$  of a mile south from White Point, which is on the southern side of the entrance to the bay.

On March 18, 1908, a contract was entered into in the sum of \$28,935, for the construction of a breakwater on the eastern side of the cove, for the protection of fishing boats and small craft.

The work was commenced on June 8, 1908, and was brought to a very satisfactory completion on October 14.

The breakwater is 320 feet long and extends to 19 feet at low water, and, with the exception of the inner end, for a distance of 40 feet, built of stone, is 16 feet wide on top; it consists of cribwork with creosoted timber sub-structure, 20 feet wide for a distance of 80 feet, 24 feet wide for a further distance of 80 feet, and 30 feet wide for the remaining distance of 120 feet. The faces of the cribwork are constructed of squared timber, laid open faced, with ties of round timber, and the work

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has been filled in solidly with ballast. The seaward face, the outer end and the inner face for a distance of 30 feet, have been close-sheathed, and a brush mattress, loaded with stone, has been placed along its seaward face, for a distance of 200 feet from the outer end, inwards, to prevent scouring of the sandy bottom.

Total expenditure during last fiscal year: \$29,329.66.

## SELMA.

Selma, Hants county, is a small agricultural village of a couple of hundred people, situated on the south side of Cobequid bay, 3 miles from Maitland, and 23 miles from Shubenacadie on the I.C.R.

In the year 1908-9, the sum of \$6,185.60 was expended in building, by contract, a block and span wharf. The work is 398 feet long, of which the shoreward 307 feet is 20 feet wide and the outer 91 feet is 25 feet wide. There are eight blocks 20 by 20 feet, one block 30 by 20 feet, and the outer block is 91 by 25 feet. The spans are all 13 feet. The work is from 3 to 24 feet high, or an average of about 16 feet.

Work was begun May 7, and finished August 10, 1908.

Spring tides rise about 40 feet.

## SHORT BEACH.

Short Beach is the name of a small fishing and farming village of about 100 people, situated on the coast of Yarmouth county, 8 miles north of the county town,  $1\frac{1}{2}$  miles north of Sandford, and  $3\frac{1}{2}$  miles south of Port Maitland.

In 1902-3 and 1903-4, the sum of \$8,155 was expended in the construction, by contract, of a breakwater. The work is 400 feet long, 25 feet wide on top and from 5 to 14 feet high, substantially built of the usual type of round-log cribwork, close-sheathed on the outer face and provided with a break.

In 1908-9, the sum of \$1,992.25 was expended in building an extension to the breakwater, 50 feet long, 25 feet wide and 15 feet high.

Work was begun September 16, and completed November 19, 1908.

Spring tides rise about 14 feet.

## SKINNER'S COVE.

Skinner's Cove, Pictou county, is on the western side of Northumberland strait, about 4 miles east of Cape John, and about 20 miles northwest of the entrance to Pictou harbour. A pond at the head of the cove is separated from the waters of the strait by a beach of sand 250 feet in width.

A contract entered into on January 5, 1905, for the opening of a channel through the beach, and for the construction of protection works in the sum of \$10,950, was completed, together with some extra work, costing \$927.41, on August 1, 1906.

The works under contract included the excavation of a channel 15 feet in width at bottom and 425 feet in length, to a depth of  $2\frac{1}{2}$  feet at low water; the construction of piers of brush, stone and piles, 304 feet in length and 15 feet in width, on each side, and of a cribwork block 40 feet in length and 20 feet in width with creosoted timber sub-structure, in extension, outwards, of each pier. The extra work included the extension of the piers on each side of the channel, inwards, 40 feet and the placing of additional close-sheathing for a length of 144 feet, on the seaward side and at the inner end of the western pier. Spring tides rise 7 feet.

In 1907-8, the sum of \$739.50 was expended in constructing brush and stone work in extension, inwards, of the piers on each side of the channel. The extensions, 78 feet in length on the west side and 68 feet in length on the east side, are 14 feet in width, on top, and 8 feet in height, founded in trenches excavated to 3 feet above the level of extreme low water.

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During the year 1908-9, the sum of \$2,433.45 was expended in extending the brush and stone work on the west side 78 feet and in raising that on the east side one foot, or to four feet above high water; in procuring a dredging plant and scow, to be used next year in re-opening the channel and in extending it inwards about 400 feet to the pond.

Work of construction was in progress October 22 to November 24.

## SOUTH LAKE.

South lake, Lakevale, Antigonish county, is situated on the western side of St. George's bay, about mid-way between the entrance to Antigonish harbour and Cape George.

It is a large sheet of fresh water, fed by two streams, and is about 1 mile in length and  $\frac{1}{2}$  of a mile in width, with a good depth of water; it is separated from the bay by a beach of sand and gravel, about 900 feet in length, 300 feet in width and about 8 feet above the level of high water springs.

The sum of \$8,000 was voted for expenditure during 1907-8 to open the lake as a harbour for boats, by cutting a channel 40 feet wide at the bottom to two feet below low water, through the beach, and to protect the northern side of its entrance, by a breakwater 300 feet in length; of the amount voted the sum of \$5,850.53 was expended in procuring the whole of the materials required for the construction of the breakwater.

During 1908-9, the sum of \$6,697.44 was expended in the construction of the breakwater, and in excavating the channel through the beach, down to about two feet above high water.

The breakwater is 300 feet long and 20 feet wide, extending to four feet at low water, and consists of round timber cribwork, creosoted to half tide and close-sheathed on the seaward face and outer end.

Work of construction was commenced on August 22, and suspended on January 25, 1909.

## SPRY HARBOUR.

Spry Harbour, Halifax county, is the eastern arm of Spry bay; it is well sheltered, free from ice, and close to the route of the steamer making weekly trips between Sheet Harbour and Halifax. Around the harbour, within a radius of two miles, there is a population of about 200, chiefly engaged in fishing and farming.

In 1908-9, the sum of \$740.74 was expended in the construction of a small public wharf, which was not quite completed.

Spring tides rise about 6 feet.

The work was begun October 20, and suspended November 6, 1908.

## SUMMERVILLE.

Summerville, Hants county, is a village of some 400 or 500 people, situated on the right or east bank of the Avon river, about midway between Windsor, the county town, and the mouth of the river, where it empties into the Basin of Minas.

In 1908-9, the sum of \$392.95 was expended in the renewal of flooring of wharf and in general repairs, including new fenders and guard timbers.

Work was begun August 1, and completed August 19, 1908.

## TANCOOK.

Tancook, is the largest of a host of small islands in Mahone bay, on the coast of Lunenburg county. It is about 2½ miles in extreme length, north and south, by a mile in width, east and west. It is 9 miles northeast of the town of Lunenburg, the same distance southeast from Chester and about 2½ miles southwest of the Aspo-

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togen peninsula, which is the nearest mainland. The island has a population of about 600, for the most part dependent on fishing but doing a considerable amount of farming in the way of raising early vegetables.

In 1908-9, the sum of \$21,036.42 was expended in building, by contract, a break-water in South East cove, for the protection of the fishing fleet. The work is 330 feet long, 30 feet wide and, at the outer end, 21 feet high. Up to half tide, or about 3 feet above L.W.O.S.T., the whole of the timber is creosoted as a protection against the limnoria.

The work was begun July 1 and completed September 18, 1908.

Spring tides rise 6 feet.

## TANGIER.

Tangier, Halifax county, is a thriving settlement with a scattered population of some 500 or 600, situated at the head of Tangier harbour, 60 miles east of Halifax. In the neighbourhood are extensive gold areas, famous for having produced the largest nugget (27 ozs.) ever found in Nova Scotia.

In the year 1907-8, the sum of \$2,080.89 was expended in the construction of a block and span wharf. The following year, 1908-9, the sum of \$628.02 was expended in completing the road approach. The work as completed, consists of a rock and earth approach, 80 feet long, 25 feet wide, and a block and span wharf, 120 feet long and 25 feet wide. There are four blocks, 20 by 25 feet, with a height of 13 to 22 feet and four spans of 10 feet each.

The work was begun October 16 and completed October 31, 1908.

Spring tides rise about 6 feet.

## THREE FATHOM HARBOUR.

Three Fathom Harbour, Halifax county, is an irregular shaped inlet of the sea, about 1 mile in maximum length from north to south, by one-quarter to three-quarters of a mile wide, situated about 15 miles east of Halifax harbour. The harbour is much frequented and used by fishermen from the contiguous settlements of Seaforth and East and West Chezzetcook, containing, in the aggregate, a population of some 500 and 600.

To prevent the sea from breaking through the narrow shingle beach, that separates the harbour from the Atlantic, the department, in 1878, constructed cribwork along the crown of the beach. Its original length of 1,050 feet has been extended to 1,065 feet, its height is from 4 to 8 feet and its width 13 feet. It is built of round-log cribwork, fendered and ballasted.

Between the years 1901 and 1908, several expenditures were made by the department in renewals and repairs. In 1908-9, the sum of \$1,998.56 was expended in taking down and rebuilding a portion of the old work, 300 feet long, 12 feet wide and of an average height of 8 feet. The whole work was substantially built of round-log cribwork.

The work was begun September 1, 1908, and completed March 9, 1909.

Spring tides rise 6½ feet.

## TONEY RIVER.

Toney river, Pictou county, is a small stream emptying into the Northumberland strait, about midway between Pictou harbour and Amet Sound.

During the years 1905-6 and 1906-7, the sum of \$5,312.85 was expended in opening a new channel through a beach obstructing the entrance, and in constructing protection works. The protection works constructed on the east and west sides were respectively: 206 feet and 146 feet in length, and 14 feet in width, except the outer 32 feet on each side which were 20 feet in width. The piers are 35 feet apart and are each 10 feet in height from 1½ feet below to 8½ feet above extreme low water.

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The depth at extreme low water, in the channel between the piers and outside, for a distance of 50 feet, was  $1\frac{1}{2}$  feet.

Spring tides rise 6 feet.

After the completion of the protection works, in 1906-7, the sum of \$972.72 was expended out of the appropriation for that year in procuring most of the materials required for proposed 40 foot extensions of the protection works.

In 1907-8, the sum of \$758.05 was expended in constructing the 40 foot extensions for which the materials were procured in 1906-7.

During the fiscal year 1908-9, the sum of \$1,793.02 was expended in extending the protection works 50 feet.

Work was commenced October 8, and completed December 3.

## TRACADIE.

Tracadie Harbour, Antigonish county, is on the southern shore of St. George's bay, 11 miles west from the northern entrance to the Strait of Canso.

The works here consist of a breakwater on the eastern side of the entrance to the harbour, and of a retaining wall, in extension of the breakwater inwards and along the beach to the southward of it, to prevent scouring and undermining of the bank by tidal currents.

The breakwater extends a distance of 120 feet out to the edge of the channel, thence along the line of channel, outwards a distance of 100 feet. The latter section is constructed on the remains of old work; it is 16 feet wide, for a distance of 64 feet, and 20 feet wide, for a distance of 36 feet, and is constructed of round timber with creosoted timber sub-structure.

During the fiscal year 1908-9, the sum of \$1,199.67 was expended in constructing a 260 foot extension inwards of the retaining wall on the southern side of the breakwater.

Work of construction was commenced October 12, and completed November 30.

## TROUT COVE.

Trout Cove, Digby county, is a small indentation, about 1,000 feet long and 600 feet deep, on the Bay of Fundy coast of Digby Neck. It is about midway, and has the only breakwater affording shelter to fishing boats, between Digby Gut and Petit Passage, being 18 miles southeast from the former. The settlement at and near the cove, which is called Centreville, has a population of about 300 people engaged in fishing and farming.

In 1908-9, the sum of \$299.92 was expended in general repairs to the breakwater, consisting of new fenders, mooring-posts and flooring. On the seaward face, several logs were renewed and a number of cross-ties inserted.

The work was begun October 5, and finished October 24, 1908.

Spring tides rise 6 feet.

## TUPPERVILLE.

Tuppersville, Annapolis county, is a small agricultural settlement on the left or south bank of the Annapolis river, 10 miles east of the county town of Annapolis. It is a station on the Dominion Atlantic Railway. Within a radius of a mile is a population of some 400 or 500, almost exclusively engaged in farming and fruit raising.

Some forty years ago, a small wharf of cribwork was built by the inhabitants, who formed themselves into a company for that purpose. The structure is still in existence, but dilapidated and in a dangerous and inconvenient place, being situated in the mouth of a narrow creek entering the river at this point.

In 1908-9, the sum of \$1,275.31 was expended in the purchase of materials for the construction of a public wharf.

Spring tides rise about 28 feet.

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## UPPER PROSPECT.

Upper Prospect, Halifax county, is a fishing village of about 400 or 500 people, situated on the Atlantic coast, 20 miles west of the city of Halifax. The annual catch, according to the report of the Marine and Fisheries, is valued at about \$14,000; one hundred boats and one hundred and fifty men being engaged in the industry. The harbour is much exposed to seas from the south and southeast.

In 1908-9, the sum of \$3,236.98 was expended in the construction of a small break-water for the protection of the fishing fleet. The work, which is substantially built of cribwork of the usual type, is 120 feet long, 30 feet wide and from 4 to 12 feet high, provided with a break on the seaward side.

The work was begun October 1, and suspended December 8, 1908.

Spring tides rise about 6 feet.

## WALLACE.

Wallace is a scattering settlement or village, situated on Wallace bay, which runs inland a distance of 11 miles from Malagash Point. The people, who number about 1,000, are engaged in farming, fishing and quarrying.

The village of Wallace is situated on the south side of this bay, while on the north side of the bay the settlements of North Wallace, Fox harbour and Gulf Shore are located. Prior to confederation, the Nova Scotia government constructed a small wharf on the north side of this harbour, for loading purposes, which wharf has been repaired several times since by our department.

In the year 1897, the department constructed another wharf on the south side of the harbour. A steam ferry was established between these two wharfs and a channel was dredged out, so that ferriage between the two sides of the harbour could be conducted at all times of tide. This dredging soon filled up, and in the year 1905 we began operations, having in view the extension of both of these wharfs to the main harbour channel. In the fiscal year 1905-6, we expended \$10,193.82; in the fiscal year 1904-5 we expended about \$4,850; in the fiscal year 1906-7 we expended \$2,500; and during the fiscal year 1907-8 we expended \$1,450 upon this work.

We extended the wharf on the north side a distance of 1,440 feet, 1,420 feet of which consists of pile trestle bents, situated 10 feet apart, with a common width of 16 feet on top; the last 20 feet is 40 feet wide on top and is constructed of round log, stone-filled cribwork.

The south wharf was extended a distance of 223 feet, being 20 feet wide on top, and has a height of 14 feet at the outer end. This extension is constructed of continuous round log, stone-filled cribwork, well fastened and fendered. Solid cribwork was used in this extension, because it was located in the position of the old dredging, which had completely filled up with a soft mud or salt, the material would not support pilework, and indeed so soft did it prove that the cribwork settled in it from 4 to 6 feet.

Of the amount expended in 1907-8, about \$450 was paid out to meet an over-expenditure of the previous year. The remaining \$1,000 was expended in constructing a ferry slip, 60 feet in length and 12 feet wide, and a protecting pier 35 feet in length, 8 feet wide and 14 feet high, which latter work was built of regular cribwork. Some of the planking of the old work was renewed out of this amount.

During the last fiscal year, the sum of \$1,977.93 was expended in renewing the coverings of both of the old wharfs, and, on the north side, the top of the old work.

Work was begun here September 1, and continued until December 11, 1908.

Spring tides rise 6 feet; neaps, 4½ feet.

## WALLACE BRIDGE.

Wallace Bridge is a scattering farming settlement of about 200 people, situated about 2 miles from Wallace harbour. In former years there had been an old wharf,



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which had been constructed by the inhabitants and used for landing purposes, and which had fallen into thorough decay.

During the last fiscal year, the sum of \$1,500 was voted for the purpose of constructing a new wharf on this site.

The wharf follows the edge of the channel, running almost at right angles from the bridge, at the highway, towards the harbour. The first portion is a stone bank, 11 feet high, running to an old crib, the ballast of which was purchased. The rest of the old crib was worthless and was replaced with 85 feet of cribwork, which is about 15 feet high at the outer end and 20 feet wide on top, with the exception of 30 feet of its length, which is 40 feet wide.

The work was begun here October 7, and continued until November 30, of the same year.

Expenditure for fiscal year was \$1,315.54.

## WASHABUCK CENTRE.

Washabuck, Victoria county, is a district on the southern side of the eastern end of St. Patrick's channel, an arm of the Bras d'Or lakes, and extends about 6 miles along the shore. The central part of the district is called Washabuck Centre.

During the last fiscal year, the sum of \$199.98 was expended in raising the guard timbers a height of 20 inches on the channel face of the outer block and around its outer corners, for a distance of 10 feet, and in slight repairs to the inner end of the shore abutment of the wharf.

The work was commenced on July 15, and continued to August 27, 1908; it was resumed on 4th, and completed on November 13, 1908.

## WEST BERLIN.

The sum of \$249.69 has been expended during the last fiscal year, in repairing beach protection at West Berlin, chiefly in replacing ballast dislodged by moving ice and high tides.

## WESTERN HEAD.

Western Head is a post settlement in Queen's county, 5 miles from Liverpool, on the Halifax and Southwestern Railway.

During the last fiscal year, the sum of \$1,870.35 was expended in repairing a breach made by the heavy seas in the breakwater.

## WEST HEAD.

This headland on Cape Sable island, is situated about 2 miles from Clarke's Harbour. It is at the southwestern end of Barrington passage and an important fishing section of this island. Owing to its situation, it would prove to be the most convenient and easiest point of approach for the coasting steamers, which require the use of the several small ports of call on this island. As it lies, however, in such an exposed position, it was necessary to construct a wharf, which not only would accommodate the shipping, but would be a breakwater and thus adequately protect whatever shipping or boats that might be loading or lying along its sides. The Department, during the fall of 1906, began the construction of a breakwater which was continued in the summer of 1907, during which latter period the sum of \$5,000 was expended.

The proposed work, when completed, will consist of a rock bank approach, 95 feet in length, 24 feet wide on top, and 10 feet high at the outer end, and a wharf proper 210 feet in length, 20 feet wide on top, with the exception of the last 40 feet, which will be 50 feet wide on top. The work, with the exception of the approach, is being constructed of continuous crib-work of the usual style. There will be from 13 to 15 feet of water, at the outer end, at L.W.O.S.T.

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During the past fiscal year, the sum of \$989.21 was expended in the construction of the top, about 125 feet long, of the breakwater, and the partial construction of about 8 feet in height of the head, which is 50 feet long and 50 feet wide.

Spring tides, 12 feet; neaps, 9 feet.

Work was commenced August 24, and completed November 9, 1908.

#### WEST PORT JOLI.

Port Joli is a post village on an inlet of the Atlantic, in Queen's county, 14 miles from Liverpool.

During the last fiscal year, the sum of \$3,000.03 was expended in constructing a breakwater consisting of 218 feet of solid cribwork, fully ballasted, 20 feet wide and 14 feet high, at the outer end, and of a rock bank, 105 feet in length and 24 feet in width.

Work was commenced August 17, and completed November 12, 1908.

#### WHITE POINT.

The sum of \$150 was expended in clearing out the dock, on the inside of the breakwater, at this place, which had been filled up with stones, washed over by the heavy storms of the past two or three years. The work consisted in the removal of about 125 tons of loose rock; it was commenced on June 9, 1908, and continued until March 28, 1909.

#### WHITNEY PIER.

Whitney Pier, Cape Breton county, is a residential and business district on the eastern side of the southwest arm of Sydney harbour, near the Dominion Coal Company's shipping pier, and within the limits of the city of Sydney.

A contract was entered into on November 30, 1908, for the construction of a wharf, to extend 620 feet to 11 feet at extreme low or to 16 feet at extreme high water. The work under contract is to consist of an abutment, 40 feet in length and 20 feet in width; two shore blocks, each 20 feet by 20 feet, connected with each other and with the abutment by spans of 15 feet; 486 feet of pile work, 20 feet in width, and an outer block, 24 feet in line of work by 40 feet.

Construction was commenced about October 15, and continued up to December 4, when operations were suspended for the winter. On suspension of operations the abutment and the two shore blocks were in place, and up to within two feet of required height.

The expenditure during the last fiscal year amounted to \$775.91.

#### WINDSOR.

Windsor, the county town of Hants, with a population of 4,500, is an important town, situated at the head of the estuary of the River Avon, on the Dominion Atlantic railway, 46 miles northwest from Halifax. The shipping registered at this port for the year 1896 amounted to 131,000 tons. In the neighbourhood are extensive quarries of gypsum, of which about 120,000 tons are annually shipped to the United States. Some two or three million feet of lumber b.m. are annually exported by water.

In 1908-9, the sum of \$400 was expended in repairing the outer end of the training weir, which had been damaged by heavy ice the previous winter. Work was begun on September 23, and completed on October 21, 1908.

In 1908-9 also, the sum of \$5,046.22 was expended in the removal, by hand-digging, of a quantity of mud from in front of the railway wharf. Work was begun June 8, and completed September 24, 1908.

Spring tides rise about 40 feet; neaps, 36 feet.

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## WOLFVILLE.

Wolfville, Kings county, is a town of about 1,000 inhabitants, situated on the right bank and near the mouth of the Cornwallis river, which issues into the Basin of Minas, at its southwest corner. It is an important station on the Dominion Atlantic Railway, 64 miles from Halifax, 66 miles from Annapolis and 7 miles east of Kentville, the county town of Kings.

In 1908-9, the department expended the sum of \$300 in repairing and strengthening, with additional piles, the bed in front of the public wharf when loading or discharging at low water.

Work was begun July 15, and completed August 28, 1908.

Spring tides rise 48 feet; neaps, 40 feet.

## YARMOUTH BAR.

Yarmouth bar. In 1867 it was found that part of the beach between Cape Fourchu and Stony Point was gradually wearing down, and unless the action was arrested the sea would eventually sweep away the beach and destroy the harbour.

The government of Nova Scotia began the work of protecting the beach in 1867, constructing 200 feet of cribwork at Stony Point; between 1873 and 1875, the Public Works Department constructed the remaining 2,800 feet of protection work to reach Cape Fourchu, and added buttresses or groynes to stop the movement of the gravel.

In 1875-6, the protection works, badly built of stone-filled cribwork and close-piled on their seaward faces, had to be repaired and strengthened, the expenditure amounting to over \$25,000.

During the year 1896-7, the sum of \$2,983.62 was expended in carrying on the most urgent works of repair and, yearly since, expenditures have been incurred to maintain and improve the protection works, details of which may be found in the annual report for 1907-8.

In 1908-9, the sum of \$1,003.76 was expended in taking down and rebuilding 75 feet in length of the middle portion of the beach protection work that was very much dilapidated. Repairs were made to several portions of the floor of the work. Work was begun on October 1, and completed November 21, 1908.

## PRINCE EDWARD ISLAND.

## BAY FORTUNE.

Bay Fortune Harbour, Kings county, is situated on the east coast of the island, about 5 miles southwest from Souris, the eastern terminus of the Prince Edward Island Railway, and about 15 miles northeast of the entrance to Georgetown harbour.

During the last fiscal year, the wharf on the north side and its approach having become quite unserviceable for traffic, the work of reconstruction and renewal of the floor-stringers and covering of pier-head was commenced on October 12, and completed November 30, at a cost of \$497.39.

## BAY VIEW.

Bay View pier, Queens county, is situated on the eastern side and near the mouth of the Hope river, that enters New London harbour, about  $3\frac{1}{2}$  miles southeast of the harbour's entrance. The pier, which is one of those, the control of which was assumed by the Dominion government in 1883-4, is 509 feet in length; the 409 feet outwards from the shore being from 18 to 20 feet in width, it then increases gradu-

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ally to a width of 35 feet at the outer end, where a depth of 10 feet is carried, at low water spring tides, or of  $14\frac{1}{2}$  feet, at H.W. spring, that rise  $4\frac{1}{2}$  feet.

The work done during the last fiscal year consisted in repairing the roadway and replacing ballast on pierhead.

The expenditure amounted to \$194.60.

## BELFAST PIER.

Belfast Pier, Queens county, locally known as 'Halliday's wharf,' is situated on the south side of Orwell bay, about one mile from the village of Eldon.

It was constructed by the government of Prince Edward Island, previous to confederation and is one of the Prince Edward Island piers taken over by the federal government in 1883; besides affording shipping facilities for the neighbourhood, it is also the port-of-call for a passenger steamer plying, during season of navigation, bi-weekly between Charlottetown and other ports on Orwell bay, &c.

During the last fiscal year, the work done, which was commenced on October 1, and completed by the 28th day of November last, was the making up and repair of the roadway approach, sides of which were fenderpiled; renewal of plank side walk; ballasting of pier head, part planking, fendering, &c. Amount expended, \$1,210.18.

## BELLE RIVER.

The harbour, which is formed at the mouth of the river, is situated on the south side of the island about 4 miles west from Wood islands and 6 miles eastward of the mouth of the Pinette river.

During the last fiscal year, 110 feet of the sloping face of the south breakwater and 25 feet of the north breakwater have been repaired and strengthened, as far as possible, sufficiently to place it in safe condition.

Total expenditure, \$268.07.

## CHAPEL PIER.

Chapel Pier, Kings county, is on the south side of Grand river, about 3 miles from its entrance into Boughton bay, and 9 miles from Cardigan station, on the line of the Prince Edward Island Railway.

During the last fiscal year, the sum of \$210.88 was expended in procuring materials required for the renewal of fender and close-piling of the pier and general repairs to roadway approach.

## CHARLOTTETOWN.

During September last, being commenced 1st and completed 15th, a warehouse, 30 by 24 feet, with 8 feet posts, was constructed, at a cost of \$528.98, near inner end of the Marine and Fisheries wharf, for the storage of plant, &c.

## CRAPAUD PIER.

Crapaud pier, Queens county, is situated at the head of navigation of the Crapaud basin, at 'Victoria Village,' which, next to Summerside, is the most important place for shipments on the southwestern coast of the island; it is about midway between Charlottetown and Summerside harbours, and about 11 miles distant, south, from Emerald junction on line of the Prince Edward Island railway.

During the past season, the sum of \$256.86 has been expended in effecting repairs to planking on pier head; putting in fender piling; lowering slip, and enlarging and repairing warehouse, the work being commenced September 22, and completed October 23.

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## GRAHAM'S POND.

Graham's pond, Kings county, is situated on the east coast of the island, about 5 miles south of the entrance to Cardigan bay, and about the same distance north of Murray harbour. The pond has a length of about half a mile and a width of from 600 to 800 feet, carrying, in the body of the pond and a short distance from the entrance, a depth of from 5 to 7 feet of water, at ordinary pond level.

During the past season, the sum of \$1,000.16 was expended in extending the south pier a further 30 feet (this with width of 20 feet), the work built being of a most substantial character as the situation is a very exposed one; the outer end of the northern pier and other parts of the works were strengthened by fender-piling, &c. The work was commenced September 5, and completed October 12.

## HICKEY'S.

Hickey's wharf, Queens county, is situated on the southern side of the East or Hillsborough river, about 10 miles from Charlottetown, and was constructed by the local government many years before confederation. It is one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884, and is 428 feet long and from 22 to 30 feet wide.

During the past season, partial reconstruction of the top of the pier was effected. The expenditure for making up floor-stringing, covering, fender-piling, &c., on a length of 100 feet of the outer part, and general repairs on the remainder of the work is \$1,350.96. Work commenced October 3, and completed November 23, 1908.

## HIGGIN'S SHORE.

Higgin's Shore pier, Prince county, is situated on Egmont bay, about 10 miles north from Cape Egmont, and about 6 miles west from Richmond station, on the line of the Prince Edward Island Railway. The pier, which was constructed many years ago by the provincial government, is one of the Prince Edward Island piers, control of which was assumed in 1884-5 by the Dominion government.

In 1906, the department began the reconstruction, on an average of 3 feet in height, of the face-timbers, over the full length of the work on both sides, while the end was rebuilt from about the bottom; longitudinals and cross-ties, as required, being put in, and roadway made up with broken stone and gravel.

During 1907, an extension of 55 feet was made, consisting of a solid close-faced timber block, 40 by 35 feet, placed 15 feet distant from the outer end of the old pier.

During the past season, a similar extension of 65 feet was built at a cost of \$1,680.83, this to reach a further depth of about one foot of water. Work was commenced on September 21, and completed by October 31, 1908.

## HURD'S POINT.

Hurd's Point pier, Prince county, is situated on the southern side of Bedeque or Summerside harbour, about 3 miles south of Summerside, the shire-town of the county. The pier is a most important shipping point, being about the only outlet for the surplus produce of a large and well cultivated rich, agricultural district; it is also the regular calling place of the ferry steamer plying in the harbour and which makes several trips daily between it and Summerside. The pier is 500 feet in length and 26 feet width, excepting on the outer end or pier-head, where, for a length of 50 feet, it has a width of 65 feet.

During the past season, reconstruction was made of a length of 220 feet of original close-timber work face of the shore abutment, that had become entirely decayed and broken down, the roadway, as well, formed of broken stone and gravel, was made up and put in best of order. The work was commenced October 7, and completed November 30, 1908, at a cost of \$652.77.

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## LEWIS POINT.

Lewis Point pier, Kings county, is situated on the north side of the Cardigan river, a short distance below Cardigan bridge, the head of navigation, and about 6 miles from the entrance of the river into Cardigan bay. The pier is 575 feet long, being composed of a shore abutment 365 feet in length, two intermediate blocks, each 35 feet long, and an outer block, 79 feet in length, with intervening spans, each about 20 feet wide, out to the outer block which is about 33 feet wide.

The outer part, owing to decay of covering and floor-stringers, having become unsafe, their repair was effected during the past fall, at an expenditure of \$567.91; the pier-head was also covered with two-inch planking laid transversely over that in place. The work was commenced September 1 last, continued during all of that month, resumed October 17, and completed November 2.

## MIMINEGASH.

Miminegash Harbour, Prince county, is situated on the northwest coast of the island, about 15 miles from North Cape, and 18 miles from West Point.

The sand break, 230 feet long, built on the north side of the north breakwater having settled on the average of about 3 feet and its levelling up being desirable, this was effected during the past fall; a length of 150 feet of the north breakwater was also raised about 1½ feet, newly floor-stringered and covered; a brush beach protection, 200 feet long, was built on the south side, and 150 feet of breastwork repaired, rebalasted &c., the cost of all of which was \$1,468.42. Work was commenced on September 17 and completed November 21.

## MOUNT STEWART.

Mount Stewart wharf, Queens county.—Mount Stewart village is situated at the head of navigation of the East or Hillsborough river, about 18 miles east of Charlottetown; it is the junction of the Souris and Georgetown branches of the Prince Edward Island railway.

During the last fiscal year, the department purchased a wharf for \$550 and its reconstruction was effected, at a cost of \$2,235.68.

The wharf has a pier head, 80 feet long by 34 feet wide; with an approach in two sections, respectively 90 and 70 feet long, and a roadway, 33 feet wide and about 300 feet long, was also acquired.

## MCPHERSON'S COVE.

McPherson's Cove, Kings county, is on the south side Grand river, a short distance inward from what is known as "Morrison's Beach," which separates Grand River from Boughton bay, and has a length of nearly a mile, extending in a northerly direction to opposite Annandale village.

The department, in 1904-5, constructed a wharf, in all 700 feet long, at that place; as the wharf, however, did not reach the channel, it was, during the past season, extended 200 feet and some dredging done along the sides of the pier head, giving a depth of from 7 to 10 feet, at low water or of 11 to 14 feet at H.W. springs, which rise 4 feet. The cost of the extension, including dredging, &c., was \$4,619.90. Work was commenced February 26 and completed on July 29.

## NEW LONDON.

New London harbour, Queens county, is on the northern coast of the island about 10 miles east from the entrance of Richmond bay, and 9 miles west from Rustico harbour.

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During the past season, the sum of \$688.96 was expended in reconstructing a length of 200 feet of the eastern breakwater; repairing and ballasting of portions where washout and settlement had occurred, as also the securing of the sheathing, &c., of outer block. Work was commenced September 7, and finished November 7.

## NINE MILE CREEK.

Nine Mile Creek, Queens county, is situated about 6 miles west from the entrance into Charlottetown harbour, on the shallow inlet between St. Peter's island and the mainland.

During the last fiscal year, the covering, floor-stringers, guard timbers and fenders of the pier were repaired, at a cost of \$650.57. Work was commenced October 19 and completed November 7.

## NORTH CARDIGAN.

This pier is situated on the north side of the Cardigan river, about 5 miles from Cardigan bridge, and is one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884.

During the past season, general repairs were effected to the filling-in of the three outer spans of the pier, at a cost of \$80.84. Work was commenced September 25, and was completed on October 7.

## PORT SELKIRK.

Port Selkirk pier, Queens county, is situated on the south side of the Orwell river, near its entrance into Orwell bay, and is distant by water about 20 miles from Charlottetown.

The pier, which is in the form of a 'T,' consists of a pier-head 250 feet long and 35 feet wide, fronting on the edge of the channel, and an approach 250 feet long by 23 feet wide.

Work was commenced on the 3rd day and completed 21st day of October, 1908.

## ROBINSON'S ISLAND.

Robinson's Island breakwater, Queens county, is situated on the eastern side of the entrance to Rustico harbour at the western end of Robinson's island, which extends in an easterly direction, about 3 miles to Little Rustico harbour.

During the last fiscal year, work was done in renewing the filling of the breakwater. Work was commenced on 1st and completed on 23rd October, 1908.

## RUSTICO HARBOUR.

Rustico Harbour, Queens county, is on the north side of the island about midway between East Point and North Cape, and is one of its most important fishing stations. For improvement of its approach, which is obstructed by a shifting sand bar, the department, during 1881-2-3-4, constructed a breakwater on the north side of the entrance for the purpose of confining the current at ebb tide, and by scour, thus deepen the water, besides forming protection to the low beach on which most of the fishing stages and houses of the fishermen are situated.

The work originally 1,240 feet long, being, on the outer part, of solid close-faced timber work, and, for the inner 500 feet, of pile, brush and stone work. The piles in this latter having become decayed were unable to withstand the severe storms and high tides that occurred 1st to 13th November, 1906, and a length of 400 feet, at its inner end, was completely carried away, endangering the safety of the fishing stages and houses and there being danger of a channel being formed through the beach, temporary repairs were effected at once by constructing a breastwork of brush, poles and ballast which accumulated the drifting sand and made up the beach to such an

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extent that, notwithstanding the further storms that occurred later that winter and following spring, little further expenditure was required to secure that part of the work. Its outer end, however, had also suffered severely, portions of the sheathing and stringers having been carried from off the sloping face, permitting washout of ballast; most of the fendering and some of the face-timbers on the inner faces as well being destroyed, latter, owing principally to age, being the original ones placed in the work in 1884, when first constructed, had to be repaired and reconstructed, which was done during fall of 1907.

Damage again having occurred to parts of the work, the breakwater built on the north side of the harbour, owing to its exposed situation and ravages of the tere-do, it was necessary, during the past season, to repair some of the ballasting, covering, &c.; which has been done at an expenditure of \$741.11. Work was commenced October 21 and completed November 16, 1908.

## ST. MARY'S BAY.

St. Mary's Bay pier, Kings county, is situated on the southern side of St. Mary's bay and was constructed many years ago by the provincial government, being one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884.

It is in all 407 feet long, and, for a distance of 310 feet, 21 feet wide, its outer 97 feet being 29 feet wide.

During the past season, the sum of \$502.58 was expended in filling in the outer span, repairing roadway approach, where washout and settlement had occurred, and renewing all defective planking, &c., on the pier-head.

## ST. PETER'S BAY.

St. Peter's Bay, Kings county, has its entrance from the Gulf of St. Lawrence, about 35 miles west from East Point. The bay is of considerable extent, running inland about 8 miles, with the average width of three-quarters of a mile, and carrying depth of from 2 to 3 fathoms at low water.

The matter of improving the entrance having again been taken up by the department, a contract was entered into August 3, 1905, for the construction of a work, 900 feet in length, to extend from the end of the east beach towards the outer end of the western work; this first contract was completed by October 12, 1907, warranting a further extension.

A contract for a length of 500 feet was entered into with Messrs. Cox & Webster, October 30. A second contract was entered into, in the sum of \$13,500, for the construction of a further extension, 500 feet long. Work was commenced May 25, 1908, and continued without interruption until completion, on November 26. Some slight repairs were also effected to the western breakwater. Total expenditure, \$13,975.

## SOURIS.

Souris harbour, Kings county, is situated on the southern coast of the island, about 16 miles west from East Point; it is important as a harbour of refuge and place of shipment, for which it has been made available by the breakwater, built and maintained by the Dominion government. This work, which was commenced in 1875, has now a length of 1,250 feet. For several years past, repairs of the protection slope on seaward side have been in progress, and these, during the past season, were continued, some 1,115 cubic yards of large sized stone being put in at a cost of \$1,234.26.

The work was commenced August 18, and continued at intervals, up to November 10, when it was discontinued owing to conditions of weather.



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## SUMMERSIDE.

Summerside Harbour, Prince county, is on the southern coast of the island, of which it is the second place in importance for shipping, &c. The town of Summerside is next in population to Charlottetown, having some 3,000 inhabitants; it is, as well, one of the principal stations on the line of the Prince Edward Island railway, by which, distant from Charlottetown 49 miles, and from Tignish, the western terminus, 68 miles.

During the season of navigation, daily communication is had with the mainland by the steamers of the Charlottetown Steam Navigation Company, Ltd., at Point du Chene, where connection is made with the Intercolonial railway and so with all parts of Canada and the United States.

The entrance into the harbour between Indian Head and Phelan Point is about  $1\frac{1}{2}$  miles wide, a sand spit, however, partially dry at low water, extends about 3,200 feet from Indian Head, while the water is also shoal for a distance from the opposite shore, so that the deep water channel, carrying 18 feet of water or better at L.W.S. tides, is only about 500 feet wide opposite the lighthouse, situated on the north side of the sand spit outward of Indian Head; inward of this the channel to the railway and other wharfs at the town is from 400 to 1,200 feet wide and has a depth of from 23 to 30 feet at L.W.S. tides.

For the improvement of the channel, as to depth and direction, dredging has been done at different times by the department, while, for protection from southwest winds, a contract was entered into February 27, 1906, for the construction of a breakwater, to extend 3,220 feet from Indian Head to the outer side of the sand spit on which the lighthouse is situated.

Construction was commenced early in May, 1906, and continued up to about the middle of November of that year; the work done was the building partly to height and placing in position, ballasting, &c., of a length of about 700 feet of the cribwork core: some rip-rap being also placed.

Work was resumed May 1, 1907, and continued up to the end of November of that year, during which time the outer creosoted block was completed, with the exception of the deck plank and some little ballasting.

Work was again resumed May 1st, 1908, and good progress made up to December 15, the crib-work having been put in and secured over the full length and rip-rapped, excepting on length of 400 feet.

The total expenditure during the last fiscal year amounted to \$74,804.

## TIGNISH.

Tignish harbour, Prince county, is on the northeast coast of the island, about 8 miles south of North Cape, being situated at the mouth of the Tignish river, a small stream that enters the Gulf of St. Lawrence.

During the past season, an expenditure of \$977.20 was made in general repairs to the north breakwater, the work being commenced on August 28, and completed on September 29.

## WEST POINT.

West Point, Prince county, is situated on the north side of Egmont bay and eastern shore of Northumberland strait, about 14 miles from O'Leary station, on the Prince Edward Island railway, and about 35 miles, by water, from Summerside harbour.

The wharf was originally one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884; it had been built many years before confederation by the provincial government to give some shipping facilities to the district, there being no wharf or shipping place at the time between Summerside and North Cape where vessels of any size could call, a distance of about 60 miles.

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West Point being midway was considered a favourable site and the work is said to have proved of much benefit until it was seriously damaged on the breaking up of ice in the spring of 1884, from which time it remained in bad condition until 1898, when it was thoroughly repaired by the department; the wharf at the time had a length of 620 feet with width of 30 feet and extended out to a depth of about 7 feet at low water or of 11 feet at high water spring tides, that here rise 4 feet.

For the purpose of obtaining a better depth of water, a contract was let in 1900, for an extension of 100 feet in length, this also 30 feet wide, extending out to a depth of 9 feet at low water when completed in 1901, it has since, however, shoaled to a depth of about 7 feet at low water on a bar that has to be crossed for its approach. Some settlement occurred in the outer part of this 100-foot extension, built in 1900, levelling up of which was effected during the spring of 1905, portions of the sides, as well, being close-piled.

During the summer of 1907, when repairs were effected on an inner part of the wharf, 175 feet of which had been damaged by the running ice that spring, it was also intended to close-fender-pile the outer 200 feet that had become weakened by action of the teredo.

During the past season, this has been done at a cost of \$1,074.89, the work being commenced September 16, and finished November 26, 1908.

#### WOOD ISLANDS.

Wood islands, Queens county, are situated about 30 miles from Charlottetown, in a southeasterly direction, about 15 miles westward from Cape Bear, and are the most southerly part of Prince Edward Island.

During the past season, an additional jetty, 50 feet long by 20 feet wide, averaging 15 feet high, has been built, extending from near outer end of southern work and narrowing the channel to 100 feet in width. Work was commenced September 22, and completed December 5, 1908, during which period the expenditure amounted to \$1,597.22.

### PROVINCE OF NEW BRUNSWICK.

#### ANDERSON'S HOLLOW.

Anderson's Hollow, Albert county, is a cove of Salisbury bay, on the north-west side of Chignecto channel, in the Bay of Fundy. Spring tides rise 40½ feet; neaps, 32½ feet.

During 1908-9, one mooring post, four fenders, one cap timber, 27 feet long, seven knees, five crooks, twenty pieces of sheathing and ten pieces of covering were placed in the wharf. The road approach was repaired with brush, stone and gravel, and the upper works were painted with carbolineum avenarius.

Work was commenced on September 22, 1908; carried on during September, October and March, and suspended on March 31, 1909.

The expenditure during 1908-9 was \$280.27.

#### BEAN AND CROSS LAKES.

These lakes are in Madawaska county. During the last fiscal year, the channel of Cross Lake rapids was cleared for a length of 35 yards and from 25 to 30 feet wide; Bean lake being cleared for a length of 15 yards and from 25 to 30 feet wide.

Work was begun on August 10, and completed on the 28th of the same month; the total expenditure amounting to \$150.

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## BEAVER HARBOUR.

Beaver harbour, in the county of Charlotte, situated 35 miles west of St. John, in a direct line, and 7 miles from Pennfield station, on the New Brunswick Southern Railway, is used a good deal by coasting vessels as a temporary anchorage. Spring tides rise 23.5 feet; neaps, 20 feet.

On February 27, 1909, a contract was let for the construction of a pile wharf, consisting of an approach 320 feet long and 25 feet wide, and a pier-head 40 by 60 feet, with a depth of 24 feet on the face at high water, on the site of a former provincial government wharf. Work was commenced on January 14, 1909.

An agreement has been made with the contractor for the construction of a slip, and the placing of pile fenders along the approach. By the end of the fiscal year, the work was nearly completed.

The expenditure during 1908-9 was \$4,998.88.

## BUCTOUCHE BEACH.

Buctouche harbour, Kent county, is separated from Northumberland straits by a sand beach, from 6 to 7 miles long. At the southern end of the beach is the entrance to the harbour. The northern end, off which are important fishing grounds, is connected with the mainland.

The inhabitants of the northern end of the harbour were practically debarred from outside fishing by the distance from the village, around by the harbour entrance, to the fishing grounds, and there was no shelter for boats on the outside shore. It was therefore proposed to make a cut through the beach, at its northern end—the narrowest part—the width there being only about 500 feet.

Work was begun in May, 1905, and consisted first of building a stake and brush breastwork, 2,800 feet long, to raise the low parts of the beach, formerly washed by storm tides. A similar breastwork, 306 feet long, was constructed in 1906-7, parallel to the other at the lowest point.

During the fiscal years 1905-6 and 1906-7, two breakwaters were built of piles bolted to walings and cross ties and filled between with brush and stone, to protect the outer end of the cut. The north breakwater is 219 and the south breakwater 143 feet long. A breastwork, 434 feet long, of close piles backed with brush and connected by braces, with piles, 6 feet centre to centre, driven 10 feet in the rear, was built along the north side of the cut.

During 1907-8, this was extended 154 feet at the north breakwater and a similar breastwork was built for a length of 106 feet along the south side of the cut. A breastwork, 160 feet long, of close piles was also built southward from the inner end of the south breakwater, to protect the sand banks which were being carried into the cut by storms.

During the fiscal year ending March 31, 1909, 1,274 piles were driven as extension of the breastworks on each side of the cut, 404 feet long on the south side and 319 feet long on the north side and for a 75 foot extension of the north breakwater. One waling was bolted to the piles for the breakwater and 432 lineal feet to the different breastworks.

The work was in progress intermittingly between August 19, 1908, and March 12, 1909.

## CAMPBELLTON.

Campbellton, Restigouche county, is situated on the southern side of the Restigouche river, 16 miles above Dalhousie and 6 miles below the head of the tide. It is an important station on the Intercolonial railway and the terminus of the International railway now under construction. Its population in 1906 was 3,740, against 2,652 in 1901.

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In 1907-8, planking was laid between and close outside the rails of the two tracks on the deep water wharf to allow teams to drive and turn on the wharf. The outer face and end, of the Departmental block, built in 1889, was close piled with 87 piles, 40 to 54 feet long, and close piling was begun on the inside face, about 35 piles being driven.

This work was completed early in 1908-9, when about 25 piles, 35 to 48 feet long, were driven. During the fiscal year ending March 31, 1909, 5 mooring posts were also placed and strengthened with hardwood strips, spiked around the sides; 30 loads of bark and 393 loads of gravel were spread over the wharf where settlement had occurred. The tool shed was repaired and moved about 10 feet, to be entirely on the government property.

Work was in progress by day labour, between May 5 and 30, June 18 and August 31.

On May 28, 1908, a contract was entered into for the construction of a deep water wharf extension, 304 feet long and 35 feet wide, to be connected with the easterly end of the present wharf by a span, 15 feet long. Work was begun on December 18, and, by March 31, a crib, the whole length of the work, had been built to a height of from 30 to 32 feet, sunk in place, and filled with ballast. About half the upper ballast floor was laid.

The expenditure during the fiscal year 1908-9 amounted to \$19,964.42.

## CAMBELLTON (FERRY LANDING).

During the fiscal year ending March 31, 1909, the slip was widened 25 feet, i.e., to a total width of 60½ feet.

The face of the wharf, at the eastern side of the slip was also repaired by laying 3 tiers of face timbers, 75 feet long, tied in to an interior longitudinal with nine cross ties; 98 close piles, about 15 feet long, were driven and the inner 25 feet of the face was sheathed with 3-inch plank.

## CAPE BALD.

Cape Bald lies in a well settled fishing and farming district on the Northumberland Straits, about 14 miles east of Point du Chene, the nearest railway point, and 28 miles west of Cape Tormentine.

During the fiscal year ending March 31, 1909, a right-of-way and site for the proposed breakwater were acquired by the department and a road, 1,450 feet long, was graded. The outer 250 feet was excavated in the sandstone cliffs, requiring the removal of about 1,600 cubic yards of rock. The deepest cutting was 13 feet, the width of road, including ditches, one foot wide, being 20 feet.

The work was in progress between September 28 and October 31.

The expenditure during the fiscal year amounted to \$2,806.56.

## CAPE TORMENTINE.

Cape Tormentine is situated on the southwestern side of Northumberland straits, at the extreme eastern end of Westmoreland county. It is the terminus of the New Brunswick and Prince Edward Island Railway, and the nearest point of communication between Prince Edward Island and the mainland—there 9 miles apart.

In 1908-9, thirty-six pieces of 6-inch creosoted sheathing were driven across the shore end of the 'return,' to replace two layers of hardwood sheathing, the lower part of which had been destroyed by the teredo. The ballasting and planking of the pier-head and 'return' were completed, about 2,200 square feet of 4-inch plank and 119 lineal feet of cap timbers being laid. Seven iron straps were placed around the northeast corner of the pier-head. A flat car was purchased from the Intercolonial Railway and on it was erected a derrick and a building to cover the donkey engine;

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this was used in unloading and placing 823 cubic yards of large stone, to raise the slope along the outside face of the 'return' and pier-head. Some 903 cubic yards of small stone were procured.

The work was in progress between April 23 and November 20.

The expenditure for the fiscal year ending March 31, 1909, was \$9,226.60.

## CARAQUET.

Caraquet, Gloucester county, is situated on the south side of Bay des Chaleurs, 42 miles east of Bathurst. It is an extensive and prosperous fishing village and settlement, with a population of about 4,000, and with the exception of Bathurst, is the most important station on the Caraquet Railway.

The work done during the last fiscal year, consisted in covering with 6-inch hardwood sheathing the upper end of the ice-breaker, built in 1907, for the protection of the pier-head.

A warehouse, 60 feet 8 inches long and 20 feet 9 inches wide, was built on the pier-head of the wharf. The building is 11 feet high from the floor of the wharf to the eaves and 10 feet from the warehouse floor to the upper joints.

Work was in progress between September 12 and December 31, 1908, and between March 18 and 31, 1909.

The expenditure for the fiscal year ending March 31, 1909, was \$2,786.45.

## CHASES POINT.

At Chases Point, Queens county, 5 miles from Gagetown, a low water wharf was constructed of round cribwork, 160 feet long on top, fully ballasted with stone, consisting of a pier-head, 40 by 40 feet on top, battered at the rate of 1 to 10, together with an approach of continuous cribwork, 120 feet long and 20 feet wide on top, battered, on the upper side, at the rate of 1 to 1 and, on the lower, at a rate of 1 in 10, together with a further approach of rock and ballast, 60 feet in length and gravel on top.

Instructions were received for this work on September 19, 1908; work was commenced on October 5, and was suspended on March 31, 1909. This structure is complete, with the exception of placing the fenders on the lower side and one or two on the face.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$1,962.81.

## CHATHAM.

Chatham, Northumberland county, one of the chief deal ports of New Brunswick, lies on the southern shore of the Miramichi river, about 20 miles from its mouth. It has a population of about 5,000.

The Custom-house wharf, so-called, an old structure, formerly the Cunard wharf, was rebuilt during the fiscal years 1899-1900 to 1901-2. It has a frontage of 112 feet on the river and two wings, 144 and 171 feet long, all composed of close-faced cribwork, 12 feet wide. The area between the wings is filled with earth and gravel.

During September and October, 1907, a cribwork retaining wall, 52 feet long and 6 feet high, was built at the inner end of the slip on the eastern side of the wharf, and the ground was levelled off and filled in behind it.

The work was continued during the fiscal year 1908-9, when an area about 150 by 125 feet was graded.

The work was in progress between June 17 and July 24.

The expenditure for the fiscal year 1908-9 was \$248.95.

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## CHOCKFISH.

Chockfish, Kent county, is a fishing and farming settlement at the mouth of the Chockfish river, which empties into Northumberland straits, about midway between Richibucto and Buctouche.

The works at Chockfish are intended to straighten the channel at the mouth of the river, which was formerly obstructed by shifting sand bars, and to render it deep and stable, and thus afford a safe entrance and harbour for fishing boats. They consist of a dam closing the old deflected channel and north and south breakwater. The dam is 356½ feet long. It was begun in 1901-2 and extended in 1902-3. The north breakwater was built, for a length of 516 feet, in 1903-4, and extended 50 feet each year during the fiscal years 1906-7, 1907-8 and 1908-9. The south breakwater, begun in 1904-5, has a total length of 364 feet, of which the outer 50 feet was built during 1908-9. It is a continuation of the dam. An opening, 44 feet wide, is left between the two breakwaters. The outer sections of both breakwaters are 11 feet 6 inches out to out and consists of two rows of main piles, placed 6 feet apart centre to centre, in each row, and connected with cross-ties and walings of square timber. was also close piled in 1908-9, with 14 piles, and filled with brush and stone.

A slight gap between the last extension to the north breakwater and the old work was also close piled in 1908-9, with 14 piles, and filled with brush and stone.

Work was in progress intermittently between September 7 and November 20.

The expenditure for the fiscal year 1908-9 was \$1,499.95.

## DALHOUSIE FERRY WHARF.

Dalhousie, Restigouche county, lies at the head of the Bay des Chaleurs and the mouth of the Restigouche river and 16 miles below Campbellton. It has a population of about 1,200 and is an important deal port. Dalhousie harbour is, during the season of navigation, one of the best in the province, being well sheltered and having a depth of from 4 to 7 fathoms at low water.

A contract for rebuilding and enlarging the old wharf was entered into on November 24, 1907; the contract price was \$9,840.

The work of removing the old block was begun on November 28, 1907, and, by March 31, 1908, the round timber work of the shore block and block No. 1 had been erected to full height; blocks 2 and 9 and the slip were built to different heights up to within a tier of the top. The old timbers of the pier head had been removed down to high tide level and one to three tiers of new timbers were laid over it and the main piles for the enlargement of the pierhead had been driven.

The work was completed on July 21, 1908, and consists of a pierhead, 40.8 by 70½ feet, built partly on the old pierhead and partly on a new pile work addition; a slip for the ferry, 52½ by 16½ feet built with the top sloping at the rate of 1 in 7; 9 blocks, about 20 feet square, and 10 spans of 20 feet—a total length of 374.5 feet; a cribwork approach, 102 feet long and 20 feet wide, and a stone and gravel approach, about 80 feet long by 20 feet wide, with a timber cap resting on cross ties.

In September, 1908, a davit, with fastenings, blocks, and rope complete, was placed on the slip for convenience in handling freight.

The expenditure for the fiscal year 1908-9 was \$6,609.90.

## DORCHESTER.

Dorchester, is the shiretown of Westmoreland county, and a station on the Inter-colonial railway, 27 miles southeast of Moncton. Its population is about 1,100. It lies on the eastern side of the Memramcook river about 2 miles above the mouth in Shepody bay.

On January 20, 1908, a contract for an extension to the wharf was entered into, the contract price being \$13,478. The new work is 202 feet long and 52 feet wide

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on top and lies immediately below the railway wharf, but projects 14 feet outside the range of the outside face of the latter.

The extension has a close face of square timber on the outside and lower end. The inside face and upper end are of round timber sheathed with 4-inch plank. The wharf itself is 194 feet long, the upper 8 feet of the work consists of a span connecting it with the railway wharf.

The work was begun on June 3 and completed on December 9.

The expenditure for the fiscal year 1908-9 was \$17,521.13.

## DOVER.

Dover is a farming, fishing and lumbering district on the Petitcodiac river, about 10 miles below Moncton. The district is dependent on the river for cheap transportation, the chief connection being with Moncton. Lumber is loaded on scows for shipment at the river mouth.

It is intended to build two small wharfs, about 3 miles apart, the upper at the point known as Steeves' Landing—for the accommodation of the river steamer and shipment of farm produce; the second wharf at Gautreau village, as a landing place for the fishing boats; wharfs, 150 and 170 feet long, are proposed, each with an approach, 15 feet wide and pierhead 30 by 30 feet.

At Steeves' Landing, during the fiscal year ending March 31, 1909, 340 cubic yards of ballast were procured and hauled to the site, by day labour, between October 20 and 28. A quantity of lumber and iron were also purchased.

At Gautreau village, during the same fiscal year, a right-of-way, 2,826 feet long and 2 rods wide, from the public road to the shore, was acquired, and graded, 20 feet wide between ditches, from the main road to the site of the wharf. Three small culverts were constructed, two of 9 feet and one 4½ feet span. About 400 cubic yards of ballast were quarried and hauled to the site; a quantity of lumber and iron was also procured for the construction of the wharf. Work was in progress between November 11 and 30.

The total expenditure amounted to \$2,631.22.

## DURHAM.

Durham, the most easterly parish of Restigouche county, has a population of 2,200 occupied in lumbering, farming and fishing.

During the last fiscal year, the sum of \$30 was expended in clearing the break-water of logs, seaweed, &c., with which it was covered, on a length of 500 feet and to an average depth of 4 feet.

## EDGETTS LANDING.

Edgetts Landing, in Albert county, is on the west side of the Petitcodiac river, 2 miles below the village of Hillsborough.

During 1908-9, fenders were placed upon the crib-work retaining wall, and the mud bed for vessels was completed. The approach to the wharf, for a distance of 300 feet, was wharfed upon the river side and raised about 2 feet with mud, brush and gravel. A ladder was placed on the side of the wharf.

Work was commenced on September 4, 1908, carried on during September, December and January, and completed on January 27, 1909.

The expenditure during 1908-9 was \$1,037.21.

## EDMUNSTON.

The work of repairing the old wharf or breastwork, damaged by fire, was commenced on February 24, and completed on August 29, 1908.

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The sum of \$10,440 was authorized to be expended, by contract, for the construction of an extension to the breastwork. Work commenced on December 5, 1908, and was completed on March 19, 1909.

The total expenditure for the fiscal year ending March 31, 1909, amounted to \$9,544.

## EMERSON'S FALLS.

Work commenced on September 14, 1908, but was suspended on the 25th of the same month. The improvements consisted in the removal of 56 cubic yards of rock, by blasting, and the removal of boulders.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$145.45.\*

## FORT DUFFERIN.

Fort Dufferin, built by the Imperial government to command the western entrance to St. John harbour, stands on high ground, immediately above the end of Negropoint breakwater.

In 1908-9, the break was repaired for a distance of 144 feet with 10 by 12 timber, from one to four tiers in height; seventeen frame knees were made and placed in position; 400 cubic yards of ballast, which had been washed out, were replaced and 100 additional cubic yards were taken from the beach and put in the work. A pile-driver was also built.

Commencing at a distance of 30 feet from Negropoint breakwater, 308 close piles were driven to protect the face of the breastwork, covering a distance of 256 feet. The cap timber was renewed for 104 lineal feet, and stone was placed round the tool-house to secure it for the winter.

Work was commenced on April 1, 1908, and carried on during the months of April, May, October, November and December, 1908, and March, 1909. Operations ceased on March 31, 1909.

The expenditure during 1908-9 was \$2,579.47.

## GARDNERS CREEK.

Gardners creek, St. John county, enters the Bay of Fundy some 20 miles east of St. John harbour, and 14 miles from St. Martins railway station. Spring tides rise 30 feet; neaps, 25 feet.

The present work consists of substantial, open-faced cribwork, 215 feet long, sheathed on the north and east side. The head stands in a depth of 21 feet at high water, ordinary spring tides. The work, completed in 1896, affords one berth for coasters, but is dry at low water.

During 1908-9, two short pieces of cap timber, 12 inches square, one 8 feet and the other 9 feet in length, were placed in the work and secured. At the inner end of the wharf, where the road had been washed away, 11 pieces of sheathing were laid, secured and backed up with brush and stone. The approach was built up for a distance of 335 feet, the maximum fill being 3 feet. The lower side of this fill has been wharfed for a length of 160 feet, and a wire fence, 69 feet long, has been put up.

Work was commenced on October 16, and completed on November 6, 1908.

The expenditure during 1908-9 was \$289.75.

## GAUNCES.

A breakwater was constructed, 82 feet long and from 3 to 31 feet wide, and 149 feet long and 21 feet wide, making a total length of 231 feet, 8½ feet high and about one-third filled with rock and bolted with iron bolts. Work was commenced on September 21, 1908, and completed the same year, on October 17.



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During the fiscal year ending March 31, 1909, the total expenditure amounted to \$499.95.

## GRANDE ANSE.

Grande Anse, Gloucester county, a station on the Caraquet Railway, and a fishing and farming settlement, with a population of between 700 and 800 inhabitants, is situated on the southern shore of Baie des Chaleurs, 25 miles northeast of Bathurst and 15 miles west of Caraquet.

To afford shelter for the fishing boats, the department began, in 1876, the construction of a detached breakwater, which, at the beginning of the present fiscal year, consisted of a pier-head 238 feet long, and a shore arm 409 feet long. The last extension, 250 feet long, was completed in 1903-4.

During the fiscal year ending March 31, 1909, the construction of an extension to the shore was in progress, by day's labour, on August 25, September 3 and 5, and September 15 to December 5. A cribwork 250 feet long and 15 feet wide was built, 14 tiers high at the outer and 6 tiers high at the inner end. The stringers were laid on the outer 170 feet, and the work was sheathed on each side for 52 feet. Eight sills were laid along the inner 80 feet to support trestle bents which will carry the roadway at the incline of 1 in 12 from the level of the breakwater to the bank.

The expenditure for the fiscal year ending March 31, 1909, was \$3,239.81.

## GRAND FALLS.

Between Grand Falls and Andover the channel of the river was cleared and 76 cubic yards of rock or boulders were blasted. Work commenced on August 8, 1908, and was completed on the 25th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$698.24.

## GRAND LAKE.

*Dredging.*

This work was authorized on June 9, 1908, dredging commenced on the 13th of the same month and was completed on October 19, 1908. The total length of the channel made is 3,500 feet, being 75 feet wide on the bottom, with slopes of 3 to 1, the depth made being 7 feet at low water summer level. This dredging was performed by the Maritime Dredging and Construction Company.

During the fiscal year ending March 31, 1909, 96,673½ cubic yards of ordinary spoil were removed.

## GRAND RIVER.

General improvements were made on the Grand river; the channel was cleared for a distance of 6 miles, 20 cubic yards of rock being blasted and the boulders removed. Work commenced on September 1 and was completed on the 19th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$189.50.

## GRASSY ISLAND.

*Dredging.*

This work was authorized on October 15, 1908, and was commenced by dredge *Asp* on the 20th of the same month. This dredging was for the purpose of making a channel to Dunham's wharf, on the eastern side of Grassy island, to be 592 feet long and 75 feet wide and to have a depth of 9 feet, at low water level, the spoil consisting of sand and mud. Work was suspended on November 18, 1908.

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During the fiscal year ending March 31, 1909, 9,784 cubic yards of ordinary spoil were removed and the total expenditure amounted to \$4,955.

## GREAT SALMON RIVER.

Great Salmon river, St. John county, is a small tidal inlet, 8 miles east of Quaco. Shipments of lumber are made from this place to St. John.

A contract, for the construction of a breakwater, 180 feet long and 18 feet wide on top, for the protection of the entrance to the harbour, was signed on the July 27, 1905, and, by October, 1906, it was completed.

An extension, consisting of round cribwork, 192 feet long and 18 feet wide on top, which had been let by contract in November, 1907, was begun and completed during 1908-9.

Work was begun on June 7 and completed on October 27, in the same year.

The expenditure during 1908-9 was \$8,728.40.

## HERON ISLAND.

Heron Island, Restigouche county, is about 4 miles long and is one mile wide. It lies in the Baie des Chaleurs, opposite New Mills Station, on the Intercolonial railway and is 1 to 2 miles distant from the mainland. By water, it is ten miles from Dalhousie.

The island is nearly surrounded by wide flats, which makes landing very difficult especially on the landing side. In 1890, the provincial government built a wharf, about 196 feet long, at a cost of \$900. The wharf, however, could not be reached, except at about half tide, and therefore was of very little benefit. The outer end also has been lifted and displaced by the ice and was liable to be carried away.

It was proposed therefore to rebuild the outer 25 feet of the present work and extend it 218 feet to reach a depth of 2 feet at L.W.O.S.T., or 11 feet at H.W.O.S.T.

Work began on October 8, 1908, was discontinued between December 6 and March 18, and by March 31, 1909, the outer 25 feet of the old wharf had been removed and replaced with a block, 24 by 18 feet, which wanted only the cap timber and the sheathing at the sides. An additional block, 22 by 18 feet, was built to the level of the top of the stringers, sunk in place and half filled with stone. The stringers of a span, 20 feet long, between the two blocks were laid. A ramp, 25 feet long by 18 feet wide, was built on the old work, as an approach to the higher level of the new. A quantity of materials were obtained for the continuation of the work.

The expenditure for the fiscal year ending March 31, 1909, was \$1,569.67.

## INDIAN POINT.

A breakwater was constructed, 54 feet long, 3 to 12 feet wide and  $3\frac{1}{2}$  high, filled with rocks. The work commenced on September 4, 1908, and was completed on October 12 of the same year.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$74.38.

## IROQUOIS RIVER.

On this river, a breakwater was constructed, 200 feet long,  $2\frac{1}{2}$  feet high and 5 feet wide; the channel of the river was also cleared for about three miles. The work commenced on October 12, 1908, and was completed on the 24th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$199.71.

## KENNEDYS FLAT.

A breakwater was constructed, 460 feet long, 3 feet high and 6 feet wide. Work commenced on March 1, 1909, and was completed on the 20th of the same month.

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During the fiscal year ending March 31, 1909, the total expenditure amounted to \$237.

## KOUCHIBOUGUAC.

Kouchibouguac Harbour, Kent county, is situated on the western side of Northumberland straits, 12 miles north of the entrance to Richibucto harbour and 18 miles south of Miramichi bay.

The entrance from the sea is through a narrow passage or gully, between long sand beaches that extend nearly parallel with the mainland and inclose a large expanse of water, generally very shallow, except in the channels from the rivers entering it, chief of which are the Black and Kouchibouguac rivers. The latter has a depth of 10 to 12 feet at low water, near Kouchibouguac village, about 8 miles from the entrance.

At the gully, there is 18 feet of water, but, outside, as usual on this coast, there is a bar extending completely across, having a depth of only about  $7\frac{1}{2}$  feet at low water, and which varies considerably both as to depth and as to the position of the best water across it.

In the last few years, a new gully has opened up about one mile north of the main entrance and threatened by diminishing the current, to lessen the depth of water at the latter. The depth in the new gully was about  $1\frac{1}{2}$  feet at L.W.O.S.T., or  $6\frac{1}{2}$  feet at H.W.O.T. at the beginning of 1908.

Work has therefore been in progress during the fiscal year 1908-9 between August 24 and November 11, on the construction of a dam, 400 feet long, to close the new gully. The dam consists of piles, 6 feet apart, securing a brush mattress, 18 feet wide, to be weighted with large and small stone. Before the work had been securely ballasted, the heavy storm and exceptionally high tides of the 27th and 28th October carried away the greater part of the brush and about 20 of the 110 piles driven.

The expenditure for the fiscal year ending March 31, 1909, was \$2,489.09.

## LAMEQUE.

Lameque, Gloucester county, is a fishing and farming settlement of about 375 inhabitants on Shippigan island, on the eastern side of Shippigan harbour.

During the last fiscal year, the construction of a warehouse, 30 by 80 feet, was commenced, it is to be built partly on the outer edge of the pierhead and partly on three cribwork blocks, two of which are 25 by 30 feet, and the third, 29 by 30 feet.

The construction of the blocks was in progress between September 1, 1908 and January 6, 1909, in which time two blocks were built to within three tiers of the top and the third block to within 7 tiers of the top. All three blocks were sunk in place and filled with ballast. A quantity of materials was procured for the completion of the work.

The expenditure for the fiscal year ending March 31, 1909, was \$2,499.63.

## LITTLE RIVER (GRAND FALLS).

A dam was constructed at Grand Falls, Little river; it is 150 feet long, 12 feet high, 26 feet wide on the bottom and 11 feet wide on top, gravelled to within 4 feet of the top and with an abutment of 16 by 18 feet filled with stone; work was commenced on October 5, 1908, and was completed on the 24th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$456.58.

## LITTLE FORKS (GREEN RIVER).

General improvements were made, by removing obstructions from the channel of the river and also cutting down bushes for a distance of 10 miles. This work was commenced on September 23, 1908, and was completed on October 7 of the same year.

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## LITTLE RIVER (ST. FRANCIS).

A dam, 130 feet long and 7 feet high, was constructed at this place; 30 cubic yards of rock were blasted and four big boulders removed. Work was commenced on December 21, 1908, and completed on January 5, 1909.

All obstructions were removed from this river and bushes were cut down for a distance of  $2\frac{1}{2}$  miles. Work was commenced on October 1, 1908, and was completed on the 10th of the same month.

## LONG ISLAND.

This island is in the Kenebecasis river, Kings county, it was formerly connected with Mathers island, but a channel between has been dredged and a small wharf constructed, consisting of round logs, filled with ballast, being 41 feet wide, 33 feet long, 10 feet on the front and 6 feet on the back. This work was commenced on September 26, 1908, and was completed on November 10 of the same year.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$1,577.07.

## LOWER CARAQUET.

The district of lower Caraquet, Gloucester county, includes Pokesuedie island and the lower five miles of Caraquet harbour. It has a population of 1,200 engaged chiefly in fishing. Lower Caraquet village is 7 miles east of Caraquet station and 11 miles, by water, from Shippigan.

There are six lobster factories in the district and about 100 boats are used in the cod, lobster, and herring fisheries, the combined value of which is about \$100,000.

To provide for the landing and shipment of the fish, &c., and for the steamer service of the eastern end of Gloucester county, a contract was entered into, on March 17, 1909, for the construction of a wharf at Lower Caraquet village. The contract price is \$36,500.

The wharf is to be 2,600 feet long and composed of a shore block, 550 by 20 feet, 43 blocks, spaced 20 feet apart, 25 by 20 feet, one block is to be 25 by 30 feet, one span, 20 by 30 feet, and a pierhead, 50 by 30 feet.

Construction had not begun at the close of the fiscal year.

## LOWER NEWCASTLE.

Lower Newcastle, Northumberland county, is a farming and lumbering district on the north shore of the Miramichi river, opposite Loggieville and 11 miles from Newcastle.

To provide a landing place for the river steamers, the construction of a wharf was begun in August, 1907, and by the close of the fiscal year, had advanced as follows: a stone approach,  $16\frac{1}{2}$  feet wide and 70 feet long on the centre line, with cap timbers at the sides secured to cross ties, was nearly completed; a shore block, 40 by 20 feet, span of  $15\frac{1}{2}$  feet, block,  $20\frac{1}{2}$  by 20 feet, and span of 16 feet, required only a part of the cap timbers; the pierhead, 31 by 41 feet, required the covering, cap and part of the ballast and fenders.

Construction was continued on August 13 and 14, 1908, between August 21 and January 27 and between March 26 and 30, 1909.

The work, during the fiscal year 1908-9, consisted of building an additional block, 40 by 20 feet, connected with the original pierhead with a span of 15 feet, 40 feet wide. The part begun in the previous year was completed and the three outer blocks were partly sheathed with 4-inch creosoted plank.

The expenditure for the fiscal year ending March 31, 1909, was \$2,827.18.

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## MACES BAY.

Belas Basin, a cove of Maces bay, 25 miles, as the crow flies, west of St. John, but further by road, is defended from the sea by a beach, 1,700 feet long, and is dry at low water.

During 1908-9, a block of round cribwork, 32 feet long, 16 feet wide on top, was begun and built up to 3 feet below the level of high water, ordinary spring tides, and ballasted to a height of 2 feet below the finished top. The block is intended to form part of a projected wharf.

Work was begun on October 1 and carried on during October, November, December, 1908, and March, 1909. Operations were suspended on March 12, 1909.

The total expenditure during 1908-9, was \$599.18.

## MAGUAPIT LAKE.

*Dredging.*

The dredging commenced on October 19 and closed on the 29th of the same month. The length of the channel, when completed, is to be 980 feet long by 70 feet wide on the bottom, with slopes of 3 to 1. This dredging was to be taken to 7 feet at low water, summer level, the material consisting chiefly of sand and mud.

During the fiscal year ending March 31, 1909, 4,809 cubic yards of ordinary spoil were removed.

## MAIN RIVER.

Main River, Kent county, is situated on the Richibucto river, about 9 miles above Rexton.

A wharf, 150 by 30 feet, was constructed here by the Department in 1900 and 1900-1.

The wharf was repaired during the fiscal year 1908-9, between October 17 and 29.

The approach was surfaced with gravel and a ditch about 50 feet long, was made to carry off the water from the public road clear of the approach.

Total expenditure during the year, \$150.13.

## MATHERS ISLAND.

Mathers Island, Kings county, is on the Kenebecasis river, near Rothesay. A pier was constructed at this place, consisting of round logs, filled with ballast; it is 23 feet long, 41 feet wide, 10 feet deep on the face and 5 feet deep on the back. Work was commenced on August 13, 1908, and was completed on September 25 of the same year.

## MAUGERVILLE.

Maugerville, Sunbury county, is about 3 miles from Oromocto. During the last fiscal year, a high water wharf has been constructed of round cribwork, 55 feet long by 51 feet wide, fully ballasted with stone, battered on the upper side at the rate of 1 to 1, and on the other sides at the rate of 1 to 10. Work was commenced on October 12, 1908, and was completed on March 19, 1909.

During the fiscal year ending March 31, 1909, the total expenditure amounted \$2,941.96.

## MCGOWAN'S (SHEFFIELD).

McGowan's, Sunbury county, is 20 miles from Oromocto. The former high water wharf was rebuilt; it is of round cribwork, 79 feet 11 inches long, 24 feet 6 inches wide on top, battered on the upper side for a distance of 43 feet 10 inches, the latter 36 feet of the wharf being the approach.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$2,719.11.

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## MILLS POINT.

Mills Point, Northumberland county, is situated on the southern side of Miramichi bay, 7 miles eastward of Bay du Vin. It is protected from the main Miramichi bay by Vin, Egg, Fow and Huckleberry islands, inside which is Lower Bay du Vin, forming an inner passage, about 10 miles long, to Escuminac. Mills Point lies at the eastern end of navigation in this passage, the 5 miles between the Point and Escuminac being only used by small fishing boats.

The Point is central for a good farming district and for the oyster fishery of Bay du Vin, the catch from which amounts to about 2,000 barrels per year, it is easily accessible for the large fresh and canned fish industries of the islands and Escuminac.

On February 6, 1908, the department entered into a contract for the construction of a wharf at Mills Point, 1,330 feet long, consisting of an approach, 20 by 135 feet; 25 spans each 20 by 20 feet; 24 blocks 20 by 25 feet, 1 block 30 by 25 feet, 1 span, 30 by 20 feet, and a pierhead, 30 by 50 feet.

Construction was begun on April 13 and was practically closed down for the season on October 16.

On March 31, 1909, there remained to complete the work: placing 3 ladders and 40 short lengths of fenders, trimming off about 15 projecting timbers and applying the wood preservative at a few points.

The expenditure of the fiscal year, 1908-9, was \$17,023.90.

## MISPEC.

Mispec, about 8 miles east of St. John, is a narrow tidal inlet in the rocky coast of the Bay of Fundy, at the head of which a pulp mill has been built. Two piers protect the entrance of the harbour. Both are of square cribwork, the west pier, built in 1885, being 196 feet long, 20 feet wide on top and 29 feet high. The east pier, built in 1901 is 168 feet long, 34 feet wide and 30 feet high. Spring tides rise 25½ feet.

During 1908-9, an extension of the east pier, of square cribwork, to protect the vessels of the pulp mill, was begun and completed, by contract. The work is 60 feet in mean length and 34 feet wide on top. It has a sloping face on the weather side.

Work was commenced on June 22, 1908, and completed by November 10, in the same year.

The expenditure during 1908-9 was \$7,499.25.

## MONCTON.

Moncton, Westmoreland county, N.B., is the second among the cities of the province. It is the headquarters of the Intercolonial and of the Moncton and Buctouche railways. It lies on the north side of the Petitecodiac river, 20 miles from the mouth, in Shepody bay.

The public wharf at Moncton has a frontage of only 90 feet. To accommodate the schooner traffic and for the shipment of deals, a contract, for an extension, 160 feet long, was entered into on July 8, 1908. The contract price is \$14,925.

Work began on October 15 and closed down about November 1, when from 1 to 8 tiers of face timbers has been laid in a length of 63 feet.

A change is desired in the level of the bed as given in the contract plan and other improvements have been suggested. New contract plans have therefore been called for.

The expenditure for the fiscal year 1908-9, amounted to \$393.47.

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## NEGROPOINT.

Negropoint, St. John county, is a headland, about 60 feet above high water mark at the western entrance to St. John harbour, which is formed by the estuary of the River St. John on the northern side of the Bay of Fundy. Spring tides rise 25.33 feet; neaps, 15 to 20 feet.

In addition to convenience of position for distribution, by rail, of cargoes landed at the city of St. John, the harbour is remarkable principally for great tidal range, and for consequent freedom from ice in the winter months. The harbour is open, broadly speaking, from southeast to southwest, but southerly waves are broken by Partridge island, and southwest waves are mitigated by Negro point breakwater, while the 'foul ground,' a shoal tailing down from the peninsula on which the city is built, must have more or less effect in moderating the force of the easterly seas rolling round Mispec point.

By Partridge island, a rocky eminence devoted to quarantine and lighthouse purposes, the entrance of St. John harbour is divided into east and west channels. In the former or main channel, a minimum navigable depth of 19 feet is found on the bar at low water at ordinary spring tides. Two hundred yards inside the crest of the bar, a depth of five fathoms is obtained in the narrow fairway, while higher up and between the most southerly of the principal wharfs on either side of the harbour (450 yards wide at that point) twelve fathoms are given in mid-channel. The west channel, 10 to 14 feet deep at low water, and originally 1,200 yards wide, has been contracted to about as many feet in breadth by Negropoint breakwater, which extends 2,200 feet S.E. by S., from the headland so styled.

In 1895, the department began the work of reinforcing and reconstructing the breakwater with large granite blocks and cement concrete. This work has been carried on every year since, except in 1896-7, and details of operations may be found in annual report of 1906-7 and 1907-8.

In 1908-9, 2,006 cubic yards of granite, 1,250 barrels of cement and 1,257 barrels of sand were delivered. Thirteen blocks of concrete, aggregating 319.4 cubic yards, were made in place. About 1,800 cubic yards of granite were crushed to the proper size for making concrete for next season and piled in a safe place for the winter. About 200 cubic yards of granite were placed in the breakwater, small stone was placed about the base of concrete blocks, and some of the covering of the cribwork, which had been carried away by a storm, was replaced. Carbolineum avenarius was taken to Negro point, piled up and protected from the weather.

Work for the year was begun on August 29, 1908, and was suspended on March 31, 1909.

The expenditure during 1908-9 was \$19,957.24.

## NEGUAC.

Neguac, Northumberland county, lies on the northern side of the inner Miramichi bay, 27 miles northeast of Chatham.

Between 1892 and 1894, the department constructed here a wharf, 1,180 feet long, with a depth at the outer end of 5½ to 6 feet at low water.

Some damaged and decayed planks in the covering were replaced, at a cost of \$48.49.

Work was commenced on the 27th and completed on October 29.

## NICTEAU LAKE.

General improvements were made at NictEAU lake and Caribou brook was cleared for a distance of about 3 miles, by removing all obstructions and clearing the channel. Work was commenced on October 12, 1908, and was completed on the 22nd of the same month.

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During the fiscal year ending March 31, 1909, the total expenditure amounted to \$141.

## NORTH HEAD.

At Flag Cove, near North Head, in Grand Manan, an island forming part of the county of Charlotte, and lying 24 miles south of St. Andrews, but double that distance from St. John, a wharf, known as Dixons, was purchased by the department.

In 1906-7, a little ballasting was done.

On June 11, 1907, a contract was let for an extension of this wharf, 200 feet long and 25 feet wide on top, with a battered face on the weather side. Work of construction was begun in the same month.

By the end of 1907-8, two cribs had been sunk in place, and had been extended shoreward to Dixons wharf, the whole substructure of the new work being built up to an average height of  $3\frac{1}{2}$  feet below the foot of the sloping face.

In 1908-9, the contract work was completed, with the exception of two tiers of 10 by 12 timber, to form a break.

A new approach of trestle work, 95 feet long and 33 feet wide, was built in 1907, together with a cribwork protection, ballasted with stone, 68 feet long and 14 feet wide. Between this approach and the contract work, the old wharf was swept away by the storm of February 1 and 2, 1908. The old cribwork, while in course of demolition, carried away two bents of the new approach and shifted the position of three others.

During 1908-9, these three bents were returned to position. The cribwork protection was extended, by day's labour, for a length of 56 feet, by a width of 16 feet, and an average height of 11 feet. Another block of square cribwork, 101 feet long and 30 feet wide, was begun and brought up to an average height of 13 feet, or to within 5 feet of the finished height.

The contract work, which was begun on June 22, 1907, was completed on January 2, 1909, with the exception of the break.

The day labour work was begun on October 10, 1908, and work was suspended on March 30, 1909. Work was in progress during this period.

The total expenditure during the fiscal year amounted to \$21,979.59.

## OAK POINT.

Oak Point, Northumberland county, is a farming and fishing district on the north side of the Miramichi river, 11 miles below Chatham.

To provide shipping facilities and a landing place for the river steamer, a contract was entered into, on October 23, 1906, for the construction of a wharf at Oak Point. The contract price was \$7,200.

The work began on June 8, 1907, and was completed on February 13, 1908.

The wharf is 481.3 feet long, consisting of 10 blocks, 20 feet square, 11 spans of about 20 feet and pierhead, 30 by 51 feet. The depth at the pierhead is 8 feet at L.W.O.S.T.

During the fiscal year 1908-9, inclined approaches were built at the shore end to give access to the beach and enable teams using the bord ice, which is the customary road in winter, to pass over the wharf. About 70 cubic yards of earth and rock were received from the cliff on the westerly side, to widen the approach, and 12 granite boulders on the shore were blasted and removed.

The work was done between September 21 and October 7, except removing the boulders, which took about seven days in the early part of November.

The expenditure for the fiscal year 1908-9 was \$339.03.

## OROMOCTO.

Oromocto is a post settlement in Sunbury county, on the St. John river, 6 miles from Waasis, a station on the Fredericton branch of the C.P.R., 10 miles from Fredericton.



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A high water wharf is being constructed of round cribwork, 105 feet 1 inch long on top, fully ballasted with stone, consisting of a pier-head, 51 feet 6 inches by 39 feet 7 inches on top, battered, on the upper side, at the rate of 1 to 1 and, on the other sides, at the rate of 1 in 10, together with an approach of continuous cribwork, 65 feet 6 inches long and 21 feet 9 inches wide on top, battered, on the upper side, at the rate of 1 to 10, and, on the lower, at the rate of 1 in 10, together with a further approach of rock and ballast, at present 13 feet 6 inches in length, but not completed.

Work was commenced on October 12, 1908, and was suspended on March 6, 1909.

The wharf is complete, with the exception of the fenders to be placed on the lower side, together with one-half the sheathing on the upper face and the roadway.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$4,530.14.

## PARTRIDGE ISLAND.

In order to furnish Partridge island, the lighthouse and quarantine station at the entrance of the harbour, with a water supply, an agreement was made with the corporation of St. John, whereby it extended the pipe line, in 1904, from St. John street to H. W. mark, below Fort Dufferin. The work was completed in November of that year. The department paid \$4,067.74, being three-quarters of the cost, the corporation doing the work of construction and continuing to maintain that part of the pipe line.

On Partridge island, the department, in that year, excavated 2,032 lineal feet of standard trench, almost entirely in rock. 3,600 lineal feet of 6-inch, extra heavy, galvanized, wrought-iron pipe were purchased, together with 202 flexible ball joints. 2,300 lineal feet of cast-iron pipe were also delivered, together with six valves and the same number of tees and hydrants.

In 1905-6, nine hundred and forty-six lineal feet of cast-iron pipe were laid, together with 3,253 lineal feet of wrought-iron pipe, with flexible joints, which were laid under water across the west channel of the harbour of St. John. Water was turned on in February.

In 1906-7, 1,719 lineal feet of trench were excavated principally in the rock, to the full depth; 2,332 lineal feet of 6-inch pipe were laid, together with 936 lineal feet of service pipe. 3,332 lineal feet of trench were back-filled; 11 hydrants, 9 gates and one blow-off valve were placed. At the disinfecting house, the pipe was boxed with concrete, 2½ feet square, for 30 feet in length. Two concrete retaining walls, both 3½ feet thick, one 18 feet long and 12 feet high, the other, 12 feet long and 8 feet high, were built, and all the gates and the blow-off valve were boxed. The pipes were carried and connections were made with all the buildings, the medical officer's house and the fog-whistle.

During the severe frost, on February 24, the submerged pipe, which lies on the bottom of the west channel, was found to be frozen. The temperature of the sea water, taken at that time, was 31 degrees F.

In 1907-8, the damage by frost, which occasioned leaks, was repaired by August 15, when the water was turned on. At that date, the schooner *Two Sisters* let go her anchor, fouled the pipe and parted it. The leak was practically stopped in October. On the night of November 7, during a heavy storm, another leak was made, probably by a schooner dragging her anchor. This leak was stopped on November 24. In repairing these leaks, the services of a diver had to be obtained.

On the island itself, the work of laying the pipe was completed. Seventy feet of trench were excavated, 120 feet of pipe were laid, and a length of 665 feet of trench was refilled. The trench, throughout the island, was rounded and graded up to protect it from the frost; water was taken into three of the buildings, and the under-pinning was built.

A notice board was prepared, cautioning masters of vessels from anchoring on the pipe line. This board was carried away in the storm of the first of February.

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Another notice, to the same effect, was painted, in large letters, on the masonry of the lighthouse, at the end of the breakwater.

Twenty fenders were placed on the low water landing of the quarantine station, which were capped and braced. A block of cribwork, 43 feet long, 10 feet wide and 6 feet high, was built and ballasted to protect the gate at the shore.

During the year 1908-9, several leaks have been discovered in the pipe and have been repaired by a diver. According to the meter, if it reads correctly, there is still an undisclosed leak. Part of this pipe lies on the bottom, and as far as can be ascertained, there is no leak in this part. The remainder of the pipe is laid in a dredged trench, and it will be a difficult matter to establish the leak in the trench, where it is supposed to be. Water has been turned on in the pipe at intervals, in order to supply the island.

Work was resumed this year on April 29, 1903, and suspended on February 10, 1909.

The expenditure during 1908-9 was \$144.07.

#### PARTRIDGE ISLAND.

##### *Dredging.*

During the last fiscal year dredging was done to 9 feet below low water around the quarantine wharf, so as to permit the quarantine boats to land at low water. Work began on December 29, 1908, and was suspended on January 8, 1909.

Some 1,472 cubic yards of ordinary spoil were removed and the total expenditure amounted to \$1,372.80.

#### PETIT ROCHER.

Petit Rocher, Gloucester county, is a farming and lumbering village and settlement on the northwestern side of Baie des Chaleurs, 12 miles north of Bathurst.

On March 31, 1908, there remained to complete the breakwater commenced in 1905, the building of a break, 12 feet wide by 5 feet high, around the outside and the placing of stringers and covering on the inside section 18 feet wide.

To enable the work to be used as a wharf, and to further protect the area inside the breakwater, a second contract was entered into on September 4, 1907, for an extension to the shore, consisting of a 45-foot addition to the cribwork and a rubble mound, 450 feet long and 24 feet wide on top, with slopes of large stone close laid; a superstructure of cross ties, stringers and plank and a concrete curb along the outer face, 3 feet wide at the bottom, 2 feet at the top and 3 feet high.

Construction was begun on December 11, 1907, and by March 31, 1908, the stone embankment had been built to sub-grade, i.e., to 2 feet below the finished top, for a length of 371 feet, and stone for the core had been deposited for a further length of 47 feet, about 20 feet wide. The cribwork block had been built 14 tiers high and partly filled with stone. The extension was completed on July 21, and the main breakwater on November 21.

Between September 25 and October 6, 200 cubic yards of large boulders and mixed stone were deposited, by day's labour, outside the outer end of the stone embankment, to break the force of the seas, which are concentrated there by the form of the bottom and outlying the reefs.

The main breakwater was also strengthened by placing, around the outside face, 218 extra fenders.

This work was commenced on the 11th and completed on the 24th of September, 1908.

Between March 18 and 25, 1909, 150 cubic yards of large stone were placed outside the outer end of the stone embankment to further protect the toe of the slope, and a derrick was built for placing stone, &c.

The expenditure for the fiscal year 1908-9 was \$17,223.86.

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## PINK ROCK.

Pink Rock, Westmoreland county, lies on Shepody bay, about 12 miles south of Dorchester.

Large deposits of gypsum crop out on the shore here, which are being developed by the Albert Manufacturing Company and the N. B. Gypsum Company, who, for the purpose of shipping the plaster, have built a wharf 226 feet long and 26 to 28 feet wide on top.

To give facilities for shipment by tramp steamers and for the general accommodation of vessels trading at the head of the Bay of Fundy, an extension of this wharf was asked.

On September 17, 1907, an agreement was entered into between the companies and the department, binding the companies to build a public road to the wharf and to allow the use of the wharf by the general public, the government to have the right to collect wharfage on the whole wharf other than from the companies' vessels, on consideration that the department extend the wharf. At the same time the companies excavated a berth along the inside of the wharf almost to the shore to render the necessary extension as short as possible.

An extension was accordingly begun during the fiscal year 1907-8 and reached a height of 19 feet. Construction was resumed on May 1, 1908, and completed on June 9. The extension is 75 feet long, 28 feet wide on top, and has an average height of 27 feet. It is built of round timber, with 10 inches by 10 inches cap and fenders, covered with 4-inch plank and filled with ballast.

The expenditure for the fiscal year 1908-9 was \$2,177.74.

## POINT DU CHENE.

Point du Chene, Westmoreland county, lies on the western side of Northumberland straits and on the southeast side of Shediac harbour. It is a terminus of a branch line of the Intercolonial Railway and for the steamer *Empress*, running during the season of navigation from Summerside, P.E.I.

The works at Point du Chene consist of two breakwaters, an inner and an outer, each 600 feet long, with an opening between of 80 feet, and a ballast wharf 200 feet long, connecting the outer breakwater with the Intercolonial Railway wharf. They have been repaired or rebuilt at various times.

During the fiscal year ending March 31, 1909, the covering and stringers along the inner end of the outer breakwater, which had been lifted and displaced by the storm, were replaced, and 1,332 cubic yards of slope and core stone were deposited along the outside face.

Some 37,890 feet B.M. of 6-inch creosoted timber was procured, for sheet-piling and outside face of the ballast wharf.

Work was commenced on August 4, and completed on October 22.

The expenditure for 1908-9 was \$7,974.99.

## POINT WOLFE.

Point Wolfe, in the county of Albert, is a small natural harbour on the north shore of the Bay of Fundy, about 57 miles east of St. John. The river mouth gives an indraught from the bay, 1,800 feet long and 700 feet wide. The harbour lies at the upper end of the embouchure, and is formed by a beach or bar thrown up by the sea, 1,000 feet long, 200 feet wide and 14 or 15 feet higher than the flats. The crest of this bar was being washed away by the waves to the detriment of the basin inside.

During the year 1908-9, one waling was added to the breastwork for 700 feet in length, and ballast was placed in the work to the top of this waling. A groyne of piles and plank was built some 200 feet from the former groyne, with the view of collecting further littoral drift and preventing damage. Brush, stone and gravel

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were placed on the bank of the creek to prevent further removal of sand from the inner side of the work. The end of the work was also sheathed with round poles.

Work was begun on October 5, 1908, and was suspended on March 30, 1909. Work was in progress during October, 1908, and March, 1909.

The expenditure during 1908-9 was \$498.12.

## PROVINCIAL GOVERNMENT WHARFS.

For the use of the steamers, the provincial government has built a number of wharfs, towards the cost of which the federal government has made contributions equal to half the value of their construction. The following contributions were made during the fiscal year ending March 31, 1909:—

Upper Gagetown, Queens county.. . . .	\$ 486 00
Chipman, Queens county.. . . .	467 50
Mouth of the Jemseg, Queens county.. . . .	317 13
Waterboro, Queens county.. . . .	682 50
Queenstown, Queens county.. . . .	803 75
Burton, Sunbury county.. . . .	929 75
	<hr/>
	\$3,686 63

## QUACO.

Quaco, St. John county, is on the northern coast of the Bay of Fundy, about 30 miles to the northeastward of the entrance to St. John harbour. The bay is semi-circle and lies open to the southeast between Quaco Head and Macomber Point, some 2 miles apart, the breadth from a straight line drawn between these capes being about a mile. At the mouth of a small river, discharging into the eastern end of the bay, a harbour of refuge has been formed by the construction of two piers, the eastern work, 310 feet long, built in 1873, and the western, 302 feet long, built in 1882-3. The harbour is dry at low water and is only accessible for about six hours during each tide, to the coasting vessels which come to load timber or to seek shelter. Spring tides rise 30 feet; neaps, 23.

During 1908-9, an expenditure was incurred in purchasing timber for rebuilding the pier-head and 19 feet in length of the east pier. These repairs, however, were not commenced.

On December 28, 1908, a contract was awarded for the construction of an extension to the east pier. Work was started on March 11, 1909, and some excavating for the foundation of the cribwork was done before the end of the fiscal year.

The contractors for this work have also agreed to make the repairs to the east pier, and the timber purchased for these repairs is to be taken over by them.

The total expenditure during the last fiscal year amounted to \$2,137.50.

## QUACO WEST.

At West Quaco, 30 miles to the eastward of St. John, a small wharf of round cribwork, 43 feet long on the face, 20 feet wide and about 2½ feet in mean height, was built by the fishermen, to be used as a landing.

In 1908-9, the department paid the cost of this wharf, the expenditure being \$77.98.

## REXTON.

Rexton (formerly Kingston), in the county of Kent, is situated on the Richibucto river, about 3 miles above Richibucto.

During 1891-2, the department constructed a public wharf 199 feet long and about 36 feet wide, immediately above the highway bridge.

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Through lack of ballast, the wharf had been lifted by the ice about two feet on the inner side, the timbers having parted at about half tide level.

Repairs were, therefore, made during the fiscal year 1908-9, between October 1 and 30, at a cost of \$549.49. A ballast floor was inserted along the inner side and covered with 263 cubic yards of ballast. The covering of the wharf and the hand-rail along the approach, were repaired and the fenders rebolted.

## RICHIBUCTO BEACH.

Richibucto harbour, Kent county, lies on the eastern side of Northumberland straits, about 26 miles south of the entrance to Miramichi bay and 40 miles north of Shediac. It is one of the New Brunswick deal ports and the terminus of the Kent Northern railway.

To improve the entrance to the harbour, it was proposed, many years ago, to construct two breakwaters, one from the north and the other from the south beach, the object being to confine the outlet and produce scour. With this end in view, and also to protect the beach itself from erosion, works running east and west were commenced on the north beach, in 1873, and carried on at various times until 1901, when they had reached a total length of 2,158 feet, of which the outer 300 feet has been abandoned. The remainder acts at present merely as a protection to the beach.

From 1901 to 1904, a section of the north breakwater, 300 feet long, was built, starting at the outer end of the beach protection works.

On November 16, 1905, a contract for a 300 foot extension of the breakwater was entered into. The breakwater consists of brush mattresses, weighted with small stone, through which three rows of piles, 5 feet apart are driven and on which a rubble mound is laid, 12 feet wide on top, finished with large stone sloping at the rate of 2 to 1 on the sides.

Work began on May 1, 1906, and, at the close of the fiscal year 1907-8, the four lower and three of the upper mattresses had been laid and also extra mattresses to make up for the increased depth of water at the site through scour of the bottom by the current. The pile driving had been completed, the stone slope was laid to 242 and the core stone to 274 feet from the inner end.

The contract was completed on August 25, 1908. The length of the extension on the top is 326 feet.

Between September 7 and November 12, 1908, work by day labour was in progress on a further extension. The lower mattresses, two tiers deep, reaching to about half tide level, were placed for a length of about 140 feet and loaded with stone.

The expenditure for the fiscal year 1908-9 was \$12,900.07.

## RICHIBUCTO CAPE.

Richibucto Cape, Kent county, lies 6 miles southeast of the entrance to Richibucto Harbour and 5½ miles north of Chockfish River. The distance from Richibucto Cape to Prince Edward Island is 14½ miles.

The inhabitants of Richibucto Cape, Richibucto Village (2 miles inland), and the neighbourhood, number about 1,000, engaged in farming and fishing.

During the fiscal year 1908-9, between September 7 and February 13, work was in progress on the construction of a roadway to the proposed breakwater, about 200 feet long and 20 feet wide, with a maximum cutting of 10 feet in the shale and sandstone cliffs. Quarries were opened at different points and about 1,040 cubic yards of large stone were quarried and 970 cubic yards hauled to the site. The approach to the breakwater, consisting of a stone embankment, 15 feet wide on top with slopes, on the outside, of 2 to 1 and, on the inside, of 1 to 1, was begun and about 30 feet of the outer slope and 70 feet of the inner slope were laid. A quantity of timber and other materials were obtained for the extension of the work.

The expenditure for the fiscal year 1908-9 was \$5,186.32.

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## RICHIBUCTO.

Richibucto, the shire town of Kent county, has a population of about 1,100 and is situated on the Richibucto river, about 3 miles from its mouth.

During the fiscal year 1908-9, the municipal wharf was acquired by the department and the construction of a block, 184 feet long, 30 feet wide and 7 to 8 feet high, was in progress between September 21 and November 21, to replace part of the old approach.

The upper tier of cross ties and the cap are still required on the southerly side, which is now occupied by the railway siding, and the whole top must be surfaced with gravel to complete the block.

## ROTHESAY.

Rothesay, Kings county, is on the Kennebecasis river.

The local wharf was turned over to the federal government and a right-of-way acquired. During the last fiscal year, general repairs were made to the structure and a ramp added, extending along the approach from the level of the flooring, at the pier-head, to above high water, at the shore end. This wharf consists of a pier-head, 100 feet in length, 39 feet 3 inches in width, with a ramp, 118 feet long and 24 feet 3 inches wide, together with a rockfilled roadway, 50 feet long. A plank side walk, 5 feet in width has been placed on the upper side of the work, the balance being surfaced with gravel, except for the outer face of the pier-head, where spruce flooring was laid for a width of 20 feet.

Work was commenced on November 9, 1908; but on January 6, 1909, considerable damage was done by a run of ice; owing to the spring freshet, work was suspended on March 31.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$17.52.

## RIVER ST. JOHN (TIDAL).

On a river such as the St. John, where large lumbering operations are conducted and logs are floated to the head of the tidal navigation, it may be supposed that some of them escape from the booms. This is especially the case when there is a rotten knot or end, which soon becomes saturated with water. Such logs continue to float down the river, with one end much deeper than the other, and they, together with trees drawn from the bank, constitute the snags which are frequently struck by the steamers and inflict serious damage.

During the fiscal year ending March 31, 1909, about 160 snags were picked up by a small tug and hauled up on an island, above high water mark, to prevent their taking to the water again on the rise of the river.

Work began on October 2, 1908, and was completed on the 31st of the same month. The total expenditure amounted to \$713.10.

## ST. ANDREWS.

St. Andrews, in the county of Charlotte, is a terminus of a branch of the Canadian Pacific Railway, and lies, by water, 50 miles west of St. John. The town is situated at the mouth of the St. Croix, on the point of a peninsula stretching into Passamaquoddy bay, a deep sheltered inlet of the Bay of Fundy. In the summer months, St. Andrews is a favourite watering place, frequented by tourists, yachtsmen, and also by fishermen.

## ST. GEORGE.

During 1908-9, an addition to the wharf on the east side, 140 feet long and 20 feet wide, with an average height of 19 feet, was built of round cribwork. This work, with the exception of the fendering, was completed.

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Work was begun on September 15, 1908, and suspended on March 31, 1909.  
The expenditure during 1908-9 was \$3,918.95.

## ST. JOHN HARBOUR.

*Construction.*

On November 24, 1908, a contract, in the sum of \$287,633, was entered into for the construction of an extension to the wharf at Sand Point.

The work will consist in the construction of lines of cribwork, 50 feet wide at bottom, starting at the incomplete northeast part of the present wharf, and in line with same, a length of 200 feet, thence 632 feet eastward, thence, at an angle of 45 degrees southwesterly, 297 feet 8 inches, thence westerly 163 feet to the end of the southern side of the incomplete present wharf.

In the area inclosed by the cribs is to be built a platform supported by piles and trestle work; the middle part, for a width of 50 feet, being intended to carry four railway tracks, will be built 4 feet 3 inches lower than the sides to within 15 feet of the outer end.

Operations were commenced on December 7, 1908, and were still in progress at the end of the fiscal year.

Total expenditure, \$55,312.63.

*Dredging.*

During the last fiscal year dredging operations were carried on at the following points in St. John harbour: Ballast wharf, Beacon bar, Sand point slip, Sand Point (600 and 400 foot extension and berths Nos. 1, 2, 3, 4 and 6), and York Point.

At the Ballast wharf work was commenced on December 4, and suspended on the 8th of the same month, during which period 356 cubic yards of ordinary spoil were removed, and the total expenditure amounted to \$1,124.80.

Work was resumed by dredge *Isis* on February 17, 1909, and was still in progress at the end of the fiscal year; some 12,489 cubic yards of ordinary spoil were removed, and the total expenditure amounted to \$2,898.40.

On February 16, 1909, a contract was awarded for dredging to be done at Beacon bar. Operations were commenced on February 26, but, owing to repairs to the dredge *Iroquois*, work was suspended on March 12.

This dredging is the beginning of the extension of the winter port berths to be southward of Sand Point. Under the present arrangements some ten berths are to be built, having a depth of 32 feet below low water.

During the fiscal year ending March 31, 1909, 787 cubic yards of ordinary spoil were excavated, and the total expenditure amounted to \$468.50.

A contract was entered into on September 30, 1905, for dredging a portion of Sand Point slip to a depth of 30 feet below low water. Work was commenced on October 9, 1905, and completed on July 22, 1908.

During the last fiscal year, 10,162 cubic yards of materials were removed.

In 1907, an agreement was entered into with the Dominion Dredging Company, Limited, for dredging on the 600 and 400 foot extension. Work was commenced on July 1, 1907, and was completed on April 29, 1908. The dredging was to be taken to 32 feet below low water.

During the fiscal year ending March 31, 1909, 77 cubic yards of class 1, 7 cubic yards of class 2 and 14,980 cubic yards of class 3 were removed and the total expenditure amounted to \$47,879.28.

The dredging of the southern half of the 400 feet extension, which had been commenced on September 9, 1907, was completed on May 30, 1908, the depth made being 32 feet below low water. During the last fiscal year, there were removed 12 cubic yards of class 1, 2 cubic yards of class 2, and 33,129½ cubic yards of class 3.

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The dredging at berths Nos. 1, 2, 3 and 4 was commenced, on September 19, 1907, by Mr. G. S. Mayes, under contract with the City of St. John, with the understanding that the city would be reimbursed later by the federal government. A depth of 32 feet was required over this area for a width of 80 feet from the cap of the wharf but owing to the poor foundations of the wharf it was found advisable to make 31 feet, at low water, at berths Nos. 1, 2 and 3, while at berth No. 4, the upper end was allowed to slope up from 31 feet, at low water to 20 feet.

The work known 'as the core of the 400 foot extension' was commenced on July 18 and completed on the 24th of the same month. The dredging was taken to 32 feet below low water ordinary spring tides. Some 3,076½ cubic yards of ordinary spoil were removed.

During the last fiscal year, berth No. 6, Sand Point, was cleaned up and all boulders, which were above grade, were removed. Work was commenced on November 20 and completed on February 11, 1909, during which time there were removed 647½ cubic yards of class 1, 7¼ cubic yards of class 2 and 55½ yards of class 3.

On December 24, 1908, instructions were received to permit dredge *Asp* to remove any shoaling along the face of the wharf at berth No. 6. Work was commenced on December 26 and completed on February 5, 1909, during which period some 2,319 cubic yards of materials were removed.

During the last fiscal year, the dredging done at York Point slip consisted in removing 9,139 cubic yards of ordinary spoil; the total expenditure amounted to \$8,372.10.

From October 30 to November 27, November 30 and December 1 to 17, 1908, the departmental dredge *W. S. Fielding* was engaged at the winter berths, in removing rocks, boulders and in cleaning from the steamship berths, to a depth of 31 feet, L.W.S.T., 13,675 cubic yards being removed, at a cost of 28.17 cents per cubic yard.

## ST. LOUIS.

St. Louis, Kent county, is situated on the south side of the Kouchibouguac river, about 7 miles north of Richibucto.

In 1888, the department constructed a wharf 208 by 30 feet, at the eastern side of the highway bridge.

Repairs were made in 1900-1 and again in 1902-3.

During the fiscal year 1908-9, on the 13th and between October 20 and 24, the wharf was surfaced with about 150 cubic yards of earth and small stone, 10 ballast poles 10 to 15 feet long being first placed in a hole at the outer corner where the chief settlement had occurred. The cost of this work was \$44.53.

## SHIPPIGAN GULLY.

Shippigan gully, a passage between Shippigan island and the mainland, much used by fishing and other vessels in passing from Baie des Chaleurs to the Gulf of St. Lawrence, is situated 56 miles east of Bathurst, the shire town of the county of Gloucester, and 3 miles from Shippigan, the terminus of the Caraquet railway.

During the season of 1904 and 1905, a new channel, 150 feet wide with a depth of 8 feet at low water, was dredged across the flats inside the gully to cut off a wide sweep in the old channel and give vessels a straight course from the inner harbour to sea. Delays occurred in following the bends of the channel, except in favourable winds, a depression in the flats, known as the Little channel having 2½ to 3 feet at low water, leads from near the inner end of the cut to the old channel, through which a considerable current formerly ran. To deflect this current into the new channel and thus tend to preserve and deepen the latter, a dam was built across the Little channel during the fiscal year 1908-9. The dam is about 410 feet long and 18 feet wide and is composed of piles 6 feet apart centre to centre, driven in two rows 10



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feet apart, centre to centre. A mattress, 18 feet wide, of fascines and brush is built around the piles and compressed to a thickness of about 6 feet with ballast of which about 500 cubic yards was placed over the top. The piles are cut off at about half tide level, to prevent their being pulled out or broken by the ice.

The breastworks on the east beach, at the lobster hatchery, were repaired, being filled with brush, 12 feet wide, 6 feet high for a length of 40 feet, and 2 to 4 feet high for a length of 50 feet, and ballasted with stone. A breastwork of pockets, brush and fascines, 7 feet wide, 5 to 6 feet high and 50 feet long, was built on the outside shore next the eastern breakwater, and 60 feet of a continuation of the same breastwork was filled with one to two feet of brush and two fascines. Two piles were replaced on the outside of the west breakwater and four iron straps were placed around a corner of the new block, at the west breakwater.

The expenditure for the fiscal year 1908-9 was \$2,807.48.

## SHIPPIGAN HARBOUR.

Shippigan, Gloucester county, is a village and settlement of about 1,000 inhabitants, situated on the mainland, just opposite Shippigan island. It is distant by rail 55 miles from Bathurst and 3 from Shippigan gully.

In June, 1908, slight repairs were made on the approach to the wharf, which had been gullied out by spring freshets, and a sliding door was provided for the freight shed, which was painted with carbolineum, at a total cost of \$15.19.

## SISSON FLAT.

A breakwater was constructed, 187 feet long, 21 feet wide and 7 feet high; it is ballasted for a depth of about two feet. Work commenced on August 4, 1908, and was completed on the 27th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$350.

## STONEHAVEN.

Stonehaven, formerly Clifton, Gloucester county, is situated on the south side of Baie des Chaleurs, 18 miles east of Bathurst. The breakwater, originally 425 feet long and built by private persons, was acquired by the department in 1878. During the same year it was extended 325 feet. The outer 220 feet is placed at an angle of 72° with the shore portion.

During the year 1901-2, a cribwork block 70 by 40 feet at the western end of the work was completed. This is intended to stop the stone placed along the northern face of its protection from being carried westward during easterly storms.

In 1905-6-7, a new pier was built to protect the harbour from westerly storms. It starts at the shore, 225 feet westerly of the present work, and runs out towards the end block of the old breakwater. An entrance 120 feet wide is left between the two works. The new pier consists of an approach 254 feet long and 15 feet wide on top, with a stone slope faced with close laid granite blocks along the outside, and a pier-head 50 by 30 feet.

During 1907-8, 737 cubic yards of large and mixed granite boulders and ballast were procured and placed along the outside faces of the breakwater.

During 1908-9, this work was continued. Some 490 cubic yards of granite boulders, containing over one-half cubic yard each, and 84 cubic yards of granite ballast were obtained and placed along the outside face of the pier-head, where a smooth slope was laid for a length of 180 feet. Severe storms at the end of October, damaged 40 feet of this slope, which was relaid in November.

Work was commenced on August 17, and completed on December 12.

The expenditure for the fiscal year 1908-9 amounted to \$4,010.73.

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## TRACADIE HARBOUR.

Tracadie, Gloucester county, is a lumbering, farming and fishing village and settlement and a station on the Caraquet and Gulf Shore Railway. It lies 17 miles south of Shippigan gully, and 23 miles north of the main entrance to Miramichi bay. The population of the district is about 4,500. The exports and imports amounted to about \$300,000 in 1904.

Tracadie harbour is entered by what is known as the North gully, a passage through a sand beach, about 4 miles long, which divides the harbour from the Gulf of St. Lawrence. Outside the gully, is a bar over which there is a depth of only 2.5 feet at low water ordinary spring tides, or  $7\frac{1}{2}$  feet at extreme high tides. And inside the gully is a very crooked channel about  $2\frac{1}{2}$  miles long, with a least depth of 7 feet at low water, leading to the public wharf. The poor entrance to the harbour has been a great drawback to Tracadie, which was formerly an important fishing centre, the channel at the gully having been considerably deeper in former years. It is proposed to make a cut through the beach, opposite Tracadie village, on the site of an old gully by which North Tracadie river formerly entered the sea, and to protect the channel with comparatively short breakwaters outside.

During the fiscal year 1908-9, between October 13 and November 14, work was in progress on the construction of stake and brush breastworks along the beach, to retain the sand and thus raise the beach, a considerable part of which is at present below the level of storm tides. Some 4,982 pickets were driven for a length of 9,962 feet in two rows, 4 feet apart each way. Spruce timber and fir brush were procured to be placed between the pickets.

The expenditure for the fiscal year 1908-9 was \$1,951.64.

## TRACADIE WHARF.

In 1894, the department constructed a block and span wharf at Tracadie, 1,430 feet long and 25 feet wide.

In 1900-1, a cribwork block, 55 by 27 feet, lying immediately outside the departmental work was repaired and connected with it, and repairs on the main structure were made during 1900-1, 1901-2, and 1903-4.

During 1907-8, the flooring of the wharf was repaired at a number of the worst places.

During 1908-9, between September 28 and 30 and October 1 and 18, the sum of \$499.99 was expended in removing old planking and laying 23,000 feet B.M. of new 3-inch deals. One stringer, 24 feet long, and 150 lineal feet of cap timber were renewed.

## TROUT RIVER (ST. JACQUES).

A breakwater, 90 feet long, 4 feet high and 8 feet wide, was constructed and the river was cleared by removing and blasting boulders. This work commenced on August 11, 1908, and was completed on the 29th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$197.95.

## TYNEMOUTH CREEK.

Tynemouth Creek, St. John county, 21 miles east of the city of St. John, is one of the several small havens, dry at low water, found on both shores of the Bay of Fundy, which are only useful on account of the high range of tide. Tides rise here about 28 feet. Inside a beach of gravel and stones, is a tidal basin, accessible to small vessels at high water by an opening at the east end of the beach.

During 1908-9, the top of the east pier and approach to a depth of 5 feet, was torn down and rebuilt. 37 new fenders were placed on the work, together with new

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covering throughout. The road approach, for a distance of 200 feet, was raised 3 feet, being wharfed on the creek side with 3 tiers of timber, and filled in with gravel. Some ballast was placed in the west pier, and part of the ledge, inside the east pier, was ballasted.

Work was commenced on June 2, and completed on October 31, 1908.

The expenditure during 1908-9 was \$1,300.

## UPSALQUITCH RIVER.

The Upsalquitch river is the largest tributary of the Restigouche from the south, and drains about one-third of Restigouche county. It enters the Restigouche river about 6 miles above Metapedia Station, on the Intercolonial railway. It is an important lumbering river, some 15 million feet of logs being driven down it annually and 15 lumber camps are situated on the river and its branches.

Improvements were asked to facilitate log driving and the passage of two boats, which carry about 100 loads of supplies to the camps each season, and, during August and September, 1904, the tops were blasted off about 19 ledges, a large number of boulders were blasted and removed and a gravel bar was deepened; all in the lower 12 miles of the river, at a cost of \$470.54.

During 1908-9, between September 26 and October 19, further improvements were made especially at the southeast falls, about 27 miles above the mouth. A roadway of cribwork, 170 feet long, 15 feet wide and 5 feet high, was built to allow the passage of tow horses past the falls. A channel, 15 feet wide, was made along the edge of the falls through a shoal of rocks at the foot and three ledges in the course of the falls. Trees and rubbish were cleared from the banks for 200 feet above the falls, to allow the passage of teams along the bank at high water. A point of rock, on which the logs jam, was removed about one half mile below the falls, as also a large boulder, on the main river, about 10 miles above the mouth.

The expenditure for the fiscal year 1908-9 was \$480.57.

## VASSEUR.

A breakwater, 25 feet long, 5 feet high, 7 feet wide and filled with rocks, was constructed. This work commenced on November 18, 1908, and was completed on the 25th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$72.85.

## WAPSKEHEGAN RIVER.

At the mouth of this river a breakwater 265 feet long, 18 feet wide, 6 feet high, and about one-third filled with rocks, was constructed. This work was commenced on October 19, 1908, and was completed on November 17 of the same year.

Two other breakwaters have been constructed on this river, one 60 feet long, 6 feet high and 15 feet wide, the other 65 feet long, 6 feet high and 15 feet wide. This work was commenced on March 1, 1909, and was completed on the 16th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$484.45.

## WATER'S.

A breakwater was constructed 215 feet long, 19 feet wide, 5½ feet high, and about one-sixth of the construction was filled with rock and is bolted with iron bolts. The work commenced on September 1, 1908, and was completed on the 19th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$281.91.

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## WELCHPOOL.

Welchpool, a fishing village of 600 inhabitants, is situated on Campobello island, forming part of the county of Charlotte, 50 miles southwest of St. John, in a direct line and 14 miles south of St. Andrews. Spring tides rise  $21\frac{1}{2}$  feet; neaps,  $18\frac{1}{2}$  feet.

A contract for the construction of a wharf, consisting of a pier-head 40 by 60 feet, a cribwork approach, 239 feet long, 24 feet wide for 213 feet and 42 feet wide for 26 feet, and a stone approach 35 feet long and 24 feet wide on top, was let on January 22, 1909.

By the end of the fiscal year the cribwork approach was built for a length of 215 feet and an average height of 13 feet, and the stone approach had been commenced.

Work was begun on January 19, 1909, and is still in progress.

The expenditure during 1908-9 was \$4,290.67.

## WILSON'S BEACH.

Wilson's Beach is a fishing settlement in a slight indentation of the coast on the west side of Campobello, an island in the Bay of Fundy, forming a part of the county of Charlotte.

During the year 1908-9, five loose piles, to act as elastic fenders, were placed on the western corner of the breakwater.

Work was begun on March 23, and completed on March 31.

## PROVINCE OF QUEBEC.

## AGNES, LAKE MEGANTIC.

Agnès, a post village in Beauce county, is situated on the River Chaudière, southeast of the town of Lake Mégantie, on the Canadian Pacific Railway. Population, 500.

On October 23, 1907, a contract was entered into for the construction of a landing pier near the site and upstream of the old bridge connecting Agnès with the village of Mégantie. It called for:

1. An outer concrete pier 25 feet 8 inches long and 4 feet wide at top, 26 feet 8 inches long and 5 feet wide at bottom, standing 9 feet  $3\frac{1}{2}$  inches high from low water level, on a close-faced crib substructure, 28 feet long and 10 feet wide, sunk in an average of  $4\frac{1}{2}$  feet of water.

2. A 40-foot steel span composed of two 24-inch, 80-lb. I-beams connected by two 20-inch 65-lb. I-beams, with 6 by 8-inch tamarack and pine stringers, and 3-inch pine flooring 27 feet and  $2\frac{1}{2}$ -inch wide; double,  $1\frac{1}{4}$ -inch iron pipe railing, with iron posts every 8 feet on downstream side and 12 by 12 inch cap pieces on other side.

3. A concrete abutment terminating stone approach, 76 feet long and 27 feet  $2\frac{1}{2}$  inches wide at top with sides ripped and sloped one in one and a half, sidewalk and hand railing on both sides. Total length of wharf at top 122 feet, with flooring 10 feet 11 inches above extreme low water level. Contract price \$4,600.

Work was commenced in November, 1907, and at the end of March, 1908, the crib substructure of outer pier had been sunk in place, fully ballasted and the stone approach about one-third done.

The contract was completed March 31, 1909, with a further expenditure of \$4,520 for the last fiscal year. Right of way given to the Crown by the village council.

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## AMHERST.

Amherst village is situated at the eastern end of Amherst island, one of the Magdalen islands, in the Gulf of St. Lawrence.

Amherst is a port of considerable importance. Two steamers plying between Pictou, Souris and Magdalen islands, call twice every week at Amherst.

The landing pier commenced at Point Shea in May, 1900, was completed in 1903. The length of the pier, built of birch and maple close-faced cribwork, is 488 feet, with an approach of 550 feet leading to the pier. During the last fiscal year the foundation for a freight shed, 80 by 30 feet, was partly built.

Expenditure, \$1,122.58.

## ANSE A BEAUFILS.

Anse a Beaufils, in the municipality of Cape Cove, county of Gaspe, is situated on the Gulf of St. Lawrence, 6 miles south of Percé.

In the years 1898 to 1901, protection works on each side of the channel, leading to the inner basin, were built, consisting of two training piers, each about 440 feet long.

In the last fiscal year, timber was bought for an amount of \$1,049.24 for a proposed extension to complete the work.

Expenditure, \$1,584.81.

## ANSE A LA BARBE.

Anse à La Barbe, Bonaventure county, 6 miles below Port Daniel, is a settlement of 300 to 400 people, mostly engaged in the fishing industry.

In order to shelter fishing boats, which are numerous in the neighbourhood, a contract for the construction of a breakwater was awarded on January 29, 1908, for the sum of \$11,300.

Construction was begun on June 1, and completed on September 10, 1906.

The new breakwater, which stands in 18 feet of water, at extreme low water, is a construction of round timber, 300 feet long, 24 feet wide on the top, with a sloping of  $\frac{1}{2}$  on all sides, well sheathed with 6-inch planks, and covered with 4-inch flooring.

The construction does not afford shelter for fishing boats only, but forms a safe harbour for large schooners engaged in the export of lumber, &c.

Total expenditure during the fiscal year ended March 31, 1909, \$6,974.20.

## ANSE À LA CAVE.

Anse à la Cave, or Bon Désir, in the municipality of Les Bergeronnes, is situated on the north shore of the St. Lawrence, 5 miles east of Les Bergeronnes village.

The bay of Anse à la Cave is much frequented by schooners loading cordwood and timber.

During the year 1908-9, the work done was the blasting of big boulders obstructing the entrance to the bay.

Work started in October and was discontinued in November.

Expenditure, \$200.10.

## ANSE A L'ISLOT.

Anse a l'Islet is a small harbour, 7 miles east of Newport, protected from the northerly and easterly winds by the main coast and from the southwest gales by a small island, being thus open only to southerly gales.

It was decided to build a landing pier running from the main shore towards the outside end of the island to a southwesterly direction answering both as a landing pier and as a breakwater against southerly gales.

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During the fiscal year 1906-7 two cribs, 90 feet long each, were built. The first had but shortly been placed in position, when a very severe southerly storm turned it out of position and brought the second ashore where it was demolished. The first had to be altogether unballasted and brought ashore. During the months of February and March, a crib, 90 feet long, was built and placed in position in 6 feet of water, at low tide, and built to coping.

During the fiscal year 1907-8, the cribwork commenced, together with the approach, forming a total length of 260 feet, were completed.

During the last fiscal year a crib of 100 feet was built and all the materials to complete it bought.

Expenditure, \$4,662.62.

## ANSE-AUX-GASCONS.

Anse-aux-Gascons, county of Bonaventure, is situated on the north shore of the Baie des Chaleurs, in the township of Port Daniel, 7 miles east of Port Daniel and 42 miles west of Percé. L'Anse-aux-Gascons is considered one of the best fishing stations of the Baie des Chaleurs.

During the session of 1897, in order to shelter a flotilla of 100 fishing boats, the sum of \$5,000 was voted towards the construction of a breakwater, 400 feet long, 20 feet wide.

On February 1, 1898, a contract was entered into for a bulk sum of \$11,494.

The construction, which is a close-faced cribwork, was commenced in 1898, and completed in 1899; with a total length of 436.5 feet.

During the fiscal year 1903-4, a contract was entered into for the construction of an addition, 210 feet long and 30 feet wide. The construction was begun in 1905, and completed in 1906. Contract price, \$15,494.

During the same fiscal year 1903-4, a sum of \$2,765.50 was expended for the construction of an approach.

During the fiscal year 1907-8, the new addition, which was broken and displaced by the sea during the big storm of November, 1906, had been repaired. The old portion of the wharf, which had settled down in many places, had been straightened out and levelled at a cost of \$3,999.82.

The addition forms an angle of 136 degrees with the main part of the wharf; during the great easterly gales, the sea strikes so hard against that angle that the water flies over the wharf and breaks or sinks the boats which may be lying on the other side for shelter.

At the last session of parliament, in order to prevent further disaster, a sum of \$2,600 was voted to build a crib so constructed as to fill up the angle.

Construction was begun on August 24, 1908; on October 24, date on which the work was suspended, a crib 159 feet long, by 28 feet at its greatest width, was placed in the angle, and built up to 2 feet above high water. The work was carried out by day labour, at the cost of \$2,598.70.

## ANSE AU GRIFFON.

Anse au Griffon is 17 miles west of Gaspé Cape, Gaspé county.

In the last fiscal year, a wing, 125 feet by 22 by 10 feet, was built at the shore end of the west pier, to prevent the river from opening a new channel west of the training pier built in 1905-6.

Timber was bought for the proposed completion of the work.

Expenditure, \$1,434.46.

## ANSE ST. JEAN.

Anse St. Jean is situated on the north shore of the Saguenay river, 25 miles above its mouth.

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The public landing pier at this place was commenced by the local government in 1876, and continued by federal government in the years 1879-80-81.

During the last fiscal year, general repairs were made to the wharf; work was commenced on November 6 and completed on 24th of the same month.

Total expenditure, \$400.33.

## ASHUAPMOUCHOUAN, PERIBONKA AND MISTASSINI RIVERS.

Ashuapmouchouan river, in the county of Chicoutimi, is one of the tributaries of Lake St. John and is navigable up to St. Félicien; a boat plys between Roberval and St. Félicien.

In view of the increasing depth of the channel, at extreme low water, three dykes were commenced in 1905-6, at St. Prime and at St. Félicien, in 1906-7 at Peribonka, and in 1908-9 at Mistassini.

At St. Félicien, the work done during the fiscal year was the completion of a stone and brush dyke. Work started August 1 and was completed April 1, 1909. The dyke has a total length of 2,000 feet and was built to raise the water level in the boat channel.

At Peribonka, the work done during the year 1908-9, was the completion of different dykes on the Peribonka river.

The work was started in September, and the dyke commenced last year was completed; it is 400 feet long by 2 feet high, on the north end, and 65 feet long by 2 feet, at the south end.

In October the department started to build a new dam, 250 feet long by 5 feet high. The work was stopped in the middle of December.

Mistassini river, in the county of Chicoutimi, is also a tributary of Lake St. John. The river is navigable up to Mistassini, distant from its mouth 18 miles, boats run from Roberval to Mistassini.

During the fiscal year 1908-9, the work done was the construction of a stone and brush dyke, for the purpose of raising the water level in the boat channel. The work was started in January and was discontinued April 1, 1909. Total length of this dike is 250 feet, height 10 feet.

Expenditure, \$3,008.70.

## BAIE ST. PAUL.

Baie St. Paul is a village in the county of Charlevoix; its population is 1,500, and is situated on the north shore of the river St. Lawrence, 60 miles below Quebec. It is built on either sides of the Rivière du Gouffre, which is tributary of the St. Lawrence, and empties into a large bay 3 miles wide. The bay is dry at low tide.

During the last fiscal year, the embankment leading to the wharf at Cap-aux-Corbeaux, which was considerably damaged by a landslide from the cliff opposite to the wharf, was thoroughly repaired; 50 per cent of the cross-ties were replaced, the wooden flooring was taken off and replaced by macadam thus making this flooring permanent; the coping and the guards were completely renewed.

The overhanging boulders on the cliff were taken down in order to prevent danger to the public passing on this said embankment.

The wooden flooring of the wharf and part of the floor-stringers were renewed on a length of 100 feet, starting from the shore.

Three hardwood fenders, at the outer end of the wharf, were replaced; also minor repairs were made to the mooring posts, waiting-room, flooring, moveable slip and winches.

The work was commenced on August 4, 1908, and abandoned on November 14, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$1,612.41.

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## BARACHOIS DE MALBAIE.

Barachois de Malbaie is a large parish and municipality situated at the head of Malbaie bay some 12 miles east of the county town Percé.

Barachois, on account of the large area of rich farming lands situated along the four rivers that form the Barachois; on account of the important lumber firms that have built their mills along the Barachois, and on account of its first-class fishing harbour, now that the government has started a training pier to improve the entrance, may be considered the most promising centre in Gaspé peninsula.

During the fiscal year 1904-5, a crib, 100 feet by 25 by 18, was partly built and placed in position at 590 feet from extreme high water mark and the approach thereto, from said high water mark, built of fascine mattresses with brush and stone filling commenced.

During the fiscal year 1905-6, the 100 foot crib was completed; the roadway filled, with the exception of an average of 5 feet, and a new crib, 120 feet long, built and secured into position.

During the fiscal year 1906-7, the outside crib of 120 feet was built up to 4 feet below coping and partly ballasted.

During the fiscal year 1907-8, a new crib of 100 feet was built and placed in position and the balance of the work was built up to coping and partly ballasted. A small crib of 25 feet, placed on the outside, was brought ashore by a heavy storm before it was fully ballasted and had to be replaced in position.

During the last fiscal year, the superstructure of the works commenced was completed and some 200 feet of the face work was sheathed with piles. A crib of 100 feet was commenced and materials, timber and stone ballast were bought to complete said crib.

Expenditure, \$5,151.70.

## BASSIN.

The Bassin is a large parish at the centre and west end of Amherst island. The population is composed of Acadian fishermen engaged mostly in cod fishing. On the south shore of Amherst island, opposite the said fishing establishment, there is no shelter whatever. A small breakwater was decided upon. Two cribs, 66 by 25 by 20 feet, were built, secured into place and completed.

Two schooner loads of spruce timber were delivered at the Bassin last summer, but the construction of the extension had to be delayed until next year.

Expenditure, \$1,182.10.

## BELOEIL.

Beloeil is an incorporated village in Verchères county, on the north side of the Richelieu river, and a station of the Grand Trunk Railway, 21 miles northeast of Montreal.

It has an express office, one store, two hotels, one saw-mill and the works of the Hamilton Powder Company. Population, 400.

South of the Grand Trunk Railway bridge, which crosses the river at Beloeil, the government built a number of piers and booms on both sides of the channel to facilitate the passage of steamers and barges coming down the rapid current of the river, and going through the narrow passage of the draw-bridge. There were eight piers, four on either side of the channel, distant from 80 to 100 feet from one another.

From 1885 until 1888, some slight repairs were made to the booms at a cost of \$353.43. In 1890-1, three of the piers were rebuilt from low water line, and some slight repairs were made to the booms at a cost of \$1,500.35.

In 1891-2, two other piers were rebuilt from the water line at a cost of \$1,193.38. In 1895-6, some slight repairs were made to the booms; cost \$144.79.



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In 1896-7, it was found that the guide piers, on the west side of the river, were in such bad condition that they could not be properly repaired, and an entirely new line of guide works was adopted. It was decided to build a solid cribwork wall from the Grand Trunk Railway pile abutment upwards; to remove the four old piers and booms, and to dredge a wider channel for the free passage of boats.

The work, carried out by day labour, was commenced during that fiscal year and completed in 1899-1900, at a cost of \$17,444.67, including the dredging.

In 1903-4, the top of the four guard piers, on the east side of the river, were renewed to a height of 4 to 6 feet, and sheathed with hemlock 6 inches thick; cost \$1,673.34. These repairs were continued in October, 1904, and completed at the end of November of the same year.

In July, 1905, the booms on the eastern side of channel were completely renewed at a cost of \$607.24. On the western side of channel, the wooden flooring of guide piers was removed and replaced with earth and sand. Further minor renewals to the boom, below the bridge, were also made. All these repairs done by day labour, were completed at the end of October at a total cost of \$1,173.19.

During November, 1906, and February, 1907, the guide piers on the western side of river was refilled with gravel, a small crib pier, adjoining the old Parizeau wharf on western side of river, below G.T.R. bridge, was built to moor the downstream end of boom, and a timber arrangement to the middle of boom, on east side of river, opposite guide pier, was made so as to prevent its overturning by the channel and vessels. Total expenditure during fiscal year was \$1,103.12, exclusive of some dredging.

At the end of October, 1908, the two upper rows of 12 by 12 inch timber of guide pier were renewed, the slanting face of ice-pier on opposite side of channel was resheathed with 10-inch pine.

Total expenditure during last fiscal year, \$1,151.60.

## BERTHIER.

(*En bas.*)

The village of Berthier, in the county of Montmagny, is on the south shore of the St. Lawrence, 29 miles below Quebec. A large traffic in farm produce is carried on through the coasting steamer *Champion*, which plies daily between Quebec and Berthier.

Spring tides rise 21 feet; neaps, 13 feet.

During the fiscal year 1908-9, the following works were executed on the wharf: 34,000 feet B.M. spruce deals, 3 inches thick, were used to renew the flooring and the face sheathing; five fenders and four snubbing posts of oak were replaced with the same kind of timber. Repairs were made to the three slips of the wharf, which were badly damaged by ice during the winter, and about five toises of stone were added.

The freight shed, capping pieces and mooring posts received two coats of paint, and the flooring was repaired throughout.

The work was begun on August 13, and completed by October 30.

Amount expended, \$1,399.12.

## BIC.

Bic, on the south shore of the St. Lawrence, in the county of Rimouski, about 170 miles below Quebec, is a favourite summer resort. Its harbour affords the best natural shelter for vessels of moderate draught.

Spring tides rise 16 feet; neaps, 8½ feet.

In order to provide more facilities for landing; also to accommodate the traffic with the north shore, which is growing more extensive every year, it was decided to build a wharf where vessels could land at all stages of the tides. The work will

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consist of an approach, 500 feet long, from Pointe à Coté to Ile au Massacre and following the northeast shore of that island, a distance of 550 feet, and an outside section, 400 feet in length, giving a depth of 10½ feet at low water spring tides.

During the fiscal year ended March 31, 1909, the approach to the proposed wharf was completed. The work, which was performed by day labour, was commenced on September 22, and closed on November 30.

As it was rather late in the season, the force of men was divided into two crews, one working on the approach on Ile au Massacre and the other repairing and improving the road leading from the highway to the wharf. A length of 200 feet of cribwork, 22 feet wide, was built to complete the approach, and the end is now 60 feet from the low water mark; the section to be constructed by contract will start from there.

A good deal of work was also done to improve the road leading from the village to the wharf; a large quantity of rock was blasted, and the roadway was finished by the addition of a layer of sand 6 inches thick. Ditches and culverts were built where found desirable.

The flooring of the old wharf was renewed on a length of 200 feet, as also the stringers and capping pieces; and general repairs were made throughout the wharf.

The expenditure on these works during the last fiscal year was \$7,103.32.

#### BLACK CAPE.

Black Cape is situated on the north shore of the Baie des Chaleurs, in the township of New Richmond, county of Bonaventure.

During the fiscal year, 1907-8, in order to provide accommodation to fishermen and to give shelter to boats, the sum of \$500.38 was expended in the construction of a protection crib 50 feet long by 10 feet wide, and 8 feet high and a breakwater, 56 feet long, 17 feet wide and 9 feet high.

During the last fiscal year, an addition to the breakwater, 40 feet long, 17 feet wide and 12 feet high has been built at a cost of \$349.95.

The construction, carried on by day labour, was begun on September 1 and completed on the 23rd of the same month.

#### BONAVENTURE.

Bonaventure East, an important fishing settlement in the county of Bonaventure, is situated on the north shore of the Baie des Chaleurs, 7 miles west of New Carlisle, the shiretown of the county.

During the fiscal year, 1903-4, a contract was entered into for the construction of a breakwater.

This construction, which consists of a cribwork abutment, 20 by 20 feet; five crib blocks, 20 by 20 feet, and an outer block of 460 feet, forming a total length of 700 feet, by 20 feet wide, was completed during the fiscal year 1904-5, at a cost of \$15,690.

During last fiscal year, the spaces between the blocks were sheathed with 3-inch deals; some fenders, carried away, were replaced. These repairs were commenced on October 16 and completed on November 12, at a cost of \$199.51.

#### RIVIÈRE BONAVENTURE.

Bonaventure river, in the parish of St. Bonaventure, county of Bonaventure, is one of the largest rivers in the Baie des Chaleurs, and the harbour, at its mouth, is the most important lumber shipping harbour of the Gaspesian peninsula.

In years gone by, the channel, leading into the inner basin or harbour was deep enough to allow ocean vessels to enter the basin, with plenty of water to load and float alongside the bank; but, like mostly all rivers flowing into the sea, the sudden deposition of materials carried by the river, when current strikes a larger body of

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water, the prevailing winds blowing toward shore combined with long periods of drought, are the cause that the channel is now completely blocked and closes up the entrance, at low water, for the smallest boats.

At the last session of parliament, in order to protect the outgoing current from being deflected or retarded by the prevailing seas, also to direct that current so that it will tend to scour out and deepen the channel rather than silt it, it was decided to build a training pier on the west side of the channel.

On January 29, 1900, a contract was entered into for the construction of a training pier, 1,200 feet long, by 22 feet wide, for the sum of \$24,500.

The construction, which consists of a round timber cribwork, was begun on May 1 and was nearly completed when the work was suspended at the end of December.

The amount expended during the fiscal year 1908-9 is \$18,492.50.

## BONAVENTURE WEST.

Bonaventure West, also called Petit Bonaventure is a fishing settlement between the village of St. Bonaventure and St. Charles de Caplan, in the county of Bonaventure.

During the fiscal year 1908-9, the descent to the beach was repaired, and the cribwork, to protect it against the action of the sea, was extended.

The work was begun on August 25, and completed on September 8, at a cost of \$199.88.

## CAP A LA BALEINE.

Cap a la Baleine is situated in the county of Rimouski, on the south shore of the St. Lawrence, 12 miles below Matane; it is a cove used as a harbour by fishermen.

Some years ago, a block of crib-work, filled with stone, was built by private parties, in the centre of the cove. A few years later, the block was upset by ice and the stone obstructed the harbour.

During the month of November, from the 7th to the 18th, of the last fiscal year, the government expended the sum of \$200 in removing these obstructions.

## CAPE COVE.

Cape Cove, county of Gaspé, is an important fishing station on the coast of Gaspé, some 9 miles from Percé, the shiretown. It is a port of call for steamers plying between Montreal and Pictou, and between Dalhousie and Gaspé Basin.

In 1905, the department decided to construct a landing pier at this place, and, in August, 1906, a contract was entered into for the construction of a length of 450 feet, for the sum of \$13,300. The work was completed in November, 1906.

During the last fiscal year, the shore end on the east face of the pier, was sheathed for a length of 200 feet and the ballast, that had settled all along the work, was replaced, and timber was brought in January and February.

Expenditure, \$2,068.19.

## CAPLAN.

The municipality of St. Charles de Caplan, county of Bonaventure, is one of the largest municipalities of the Baie des Chaleurs; its population, about 2,000, is composed mostly of fishermen and farmers. It is a station on the Atlantic and Lake Superior Railway, some 67 miles from Metapedia.

During the fiscal year, 1908-9, the sum of \$705.21 was expended in repairs and improvements to the four descents to the beach, previously built in the municipality by the government.

The above expenditure is divided as follows:—

McLellan's Beach.—A small breakwater, 40 feet long, 15 feet wide and 7 feet high, has been built.

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The construction was begun on September 5, and was completed on the 11th of the same month.

Robichaud's descent to beach.—To protect the descent at that place, a crib, 50 feet long, 16 feet wide, and 10 feet high has been built at the foot of the descent.

The work was commenced on August 27, and was completed on September 9.

Poirier's descent to beach.—To protect the descent against the earthslip, a retaining wall, 40 feet long, 17 feet high has been built alongside.

The construction was begun on the 6th, and completed on November 12.

Arseneault's descent to beach.—The descent at that place has been widened upon a distance of 75 feet, and a cribwork 45 feet long, 17 feet wide and 9 feet high, has been placed at the foot of the descent for protection.

The work was commenced on the 5th, and completed on September 19.

#### CAPLAN RIVER.

Caplan River is an important settlement in the municipality of St. Charles de Caplan, county of Bonaventure.

During the fiscal year, 1908-9, the training pier, on the east side of the river, upon a distance of 150 feet, has been close sheathed with 3-inch deals, driven into the bottom; on the west side, the protection work has been undone and rebuilt upon a distance of 50 feet. At the close of the season, an additional crib 60 feet long, 15 feet wide was ready to be sunk.

The construction, carried on by day labour at a cost of \$870.13, was begun on September 23, and suspended on November 29.

#### CAP SANTÉ.

The village of Cap Santé, the chief town of the county of Portneuf, is situated on the north shore of the St. Lawrence, 5 miles below Portneuf, and 31 miles above Quebec.

Spring tides rise  $14\frac{1}{2}$  feet, neaps,  $8\frac{1}{2}$  feet.

During the last fiscal year the sum of \$175.11 was expended in renewing flooring of landing slip with 3-inch hemlock deals, in an area of 9 by 52 feet. Minor repairs were also made to the shed and to the sheathing of the south and southeast corner of the wharf.

The work was commenced on June 8 and completed on the 30th of the same month.

#### CAP ST. IGNACE.

The village of Cap St. Ignace, in the county of Montmagny, is situated on the south shore of the St. Lawrence, 46 miles below Quebec.

To accommodate the traffic and to provide facilities for the landing of craft, of which the place was entirely deprived, it was decided to build a wharf, and, on December 15, 1908, a contract was entered into for the construction of the work; the contract price being \$14,913.

It comprises a structure of open-faced cribwork, 750 feet long, 22 feet wide for a length of 702 feet and 30 feet wide for remaining 48 feet or head block, together with an approach cut into the bank of the river, 103 feet in length, 22 and 30 feet wide at bottom and top respectively, with an incline of 1 foot vertical to 10 feet horizontal.

At the close of the fiscal year, the construction had not yet been commenced.

#### CARLETON.

Carleton, Bonaventure county, is one of the most important places on the north shore of the Baie-des-Chaleurs, and also a renowned summer resort.

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During the fiscal year 1908-9, the south side of the wharf, upon a distance of 100 feet, starting from low water mark, has been pile-sheathed, piles being driven from 10 to 15 feet into the bottom; stringers have been renewed; the flooring, upon a distance of 135 feet, by the full width of the wharf, has been taken up and raised to the level, and bad places have been renewed.

The repairs, carried on by day labour, were begun on September 14, and were completed on December 9.

The old beach protection, situated a few acres west of the wharf, has been replaced by a new round-timber construction, 350 feet long, 6 feet wide and 4 feet high, well ballasted with stone.

The construction, which was carried on by day labour, was commenced on October 5, and suspended on November 24.

## CAUGHNAWAGA.

Caughnawaga, or Sault St. Louis, is a post village in Laprairie county, situated on the south shore of the St. Lawrence, opposite the village of Lachine, 10 miles from Montreal and 15 miles from Beauharnois. It is entirely inhabited by the Indians of the Iroquois tribe. Population, 2,300.

In December, 1908, the department began extensive renewals on the old wharf built by the Grand Trunk Railway Company. The crib was razed down to lowest water level and rebuilt, with 40-foot return wings at each end, in close-faced crib-work, fully ballasted with stone. The roadway was improved with stone and earth. Two coal barges, sunk many years ago, some 40 feet east of wharf, were blasted to pieces with dynamite and removed.

Work completed March 31, 1909, at an expenditure of \$3,172.18.

## CEDARS (RIVER ST. LAWRENCE).

Cedars is a post settlement in Soulanges county, on the St. Lawrence river, 3 miles from Cedars station on the G.T.R., 29 miles west of Montreal, and 5 miles from Vaudreuil. Near by, in course of erection, is a power-house of the Montreal, Light, Heat and Power Company. Population of village, 344; of parish, about 1,500.

The landing pier at Cedars, first built by the local authorities, was taken over by the Crown in 1881 and immediately reconstructed at a cost of \$3,761.01.

In June and July, 1908, a sum of \$578.25 was expended in renewing the whole of the flooring of headblock in 3-inch pine, and in strengthening its two outside corners.

The structure now consists of:

A crib headblock, 115 by 24 feet, including 15 feet ice-breaker, outer face sunk in 7½ feet of water at lowest level.

An approach, 55 by 15 feet, and a store-house.

This wharf was transferred to the control of the Department of Marine and Fisheries in September, 1896.

The Crown has another wharf in the same locality, but two miles north on the southeast bank of Soulanges canal, near the swing bridge.

## CEDARS (SOULANGES CANAL).

In October, 1900, the construction of a wharf on the southeast bank of the Soulanges canal near the swing bridge was begun; it was completed June following, at a cost of \$2,768.40.

The structure consists of a pile block, 98 feet long, 30 feet wide, outer face standing 15 feet high in 9 feet of water at mean level of canal, and of a store-house, 13 by 24, adjoining said block.

During September, October and November, 1908, some floor stringers were repaired and the whole flooring renewed in 6-inch concrete mixed 1-3-5 and properly

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reinforced. The cap piece was also renewed in pine and the store-house painted. Expenditure, \$979.14.

## CHAMBORD.

Chambord, in the county of Chicoutimi, is situated on the southeast side of Lake St. John, 12 miles east of Roberval.

Chambord is the junction of the Quebec and Lake St. John Railway for the Roberval and Chicoutimi branches.

The wharf at this place was built in 1905 and consists of seven piers, 25 by 20 feet, with a headblock 30 by 50 feet, and an abutment 40 by 20 feet.

The work done during the fiscal year 1908-9 was the repairing of the approach which had been washed away.

Total amount expended, \$50.50.

## CHICOUTIMI.

The town of Chicoutimi, in the county of the same name, is situated on the south shore of the Saguenay river, 71½ miles above Tadousac, at the head of navigation. The Richelieu and Ontario Navigation Company has a daily service from Quebec to Chicoutimi, during the season of navigation, carrying passengers, freight and mail.

The work done during the fiscal year 1908-9, was the construction of a new pier, 13 feet by 20 feet and 33 feet in depth, at the west end of the present wharf.

The front of the old wharf, for a length of 128 feet and a height of 15 feet, was rebuilt in concrete; close-piles were driven in front of the said wharf to strengthen the substructure and make a good footing for the concrete; the inside of the concrete wall was filled with stone, and a concrete floor was built, but not completed.

The wooden mooring posts were replaced by cast iron bollards.

Work was started on April 22, and suspended on November 30.

On January 27, 1908, a contract was entered into, in the sum of \$52,500 for the construction of an extension, 500 feet long; on July 11, a change was made in the location of the work, the additional cost to be \$2,955; it was also decided to reduce the length to 400 feet; the extension is to be parallel with the front of the old wharf, with a return of 350 feet towards shore.

The work done during the fiscal year 1908-9, was the sinking of four piers, of 100 feet each in length, making a total length of 400 feet; 130 feet of cribwork was built at right angles with the front of the wharf; all these piers have been partly filled with stone. The piers were sunk in 15 feet of water at low water spring tides, the two first piers have a total height of 38 feet, and the remainder are about 22 feet in height.

Spring tides rise 17 feet; neaps, 9 feet.

Total expenditure during last fiscal year, \$49,078.70.

## CLARKE CITY.

(Seven Islands.)

Clarke City is situated in the bay of Seven Islands, Saguenay county, on the north shore of the Gulf of St. Lawrence, about 300 miles below Quebec.

The wharf is being built at a point called Pointe Noire, which is situated on the south shore of the bay; from there a railway line, 9 miles long, has been built to the falls of Ste. Marguerite river, where the North Shore Power Railway Navigation Company are constructing a dam and erecting a pulp mill of proposed initial capacity of 250 shipping tons, and final capacity of 500 shipping tons of pulp per day. This pulp will be carried on the railway, from the mill to the wharf, and there, transferred to steamers.

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During the session of parliament of 1903, the sum of \$25,000 was voted towards the construction of a wharf at Pointe Noire, and, during the session of 1904, a further sum of \$60,000 was voted to buy, from the North Shore Power Railway and Navigation Company, the part of the wharf built by them, for the sum of \$34,433.95, and a certain quantity of timber and iron to the value of \$21,485.34, the balance to complete the work already begun.

By order in council, March 1, 1904, the transfer by the company was accepted, and an agreement entered into with the company for the performance of the work required.

The work already done in 1903 by the North Shore Power Railway and Navigation Company, and as bought by the department, consisted of a stone approach, 575 feet long, and one crib, 200 by 30 feet, sunk and built to ordinary low tide level.

Work was resumed on May 21, 1904, and continued till October 27, 1904, when two cribs, 200 feet long by 30 feet wide, respectively, had been sunk in place, the superstructure of these two cribs and of the other one, sunk the year before, was built to 2 feet below the required elevation, and the cribs were partly filled with ballast.

Expenditure for the year 1904-5, \$49,881.92.

During the winter of 1904-5, the second and third cribs suffered damages, and to save the cribs, in 1905-6 certain work was performed to the amount of \$37.50.

During the fiscal year 1907-8, a new contract with the company, North Shore Power, Railway and Navigation, called for the completion of the stone approach, the removal of the broken cribs and the completion of the wharf to its final elevation.

Nothing was done on the stone approach which remained in the same condition it was in 1904. The broken cribs were removed, with the exception of some stone that will have to be taken away on the north side of the wharf.

As to cribwork, no timber work was done on crib 1, but the side pockets were filled, and the middle row of pockets are half-full. Since 1904, till this summer, before any more stone was put in, this crib 1, has settled down one foot; it is now at elevation 115.00.

As to crib 2, the east end was broken under low water; this crib was built up to elevation 107.00, the side pockets are mostly filled, and the middle pockets will have to be filled.

The old crib, 200 feet long by 30 feet wide, that had been sunk in 1904, was removed and replaced by two other cribs, each 100 feet long and 40 feet wide. No ballast floors were put on these, except in four pockets in order to sink them.

The work done during the fiscal year 1908-9, was the completion of the contract work, with the exception of the flooring and 3 feet of the superstructure.

Expenditure, \$9,734.52.

## COLERAINE.

Coleraine is a post village and station on the Quebec Central Railway, in Mégantic county, on Black Creek. Population, 100.

On February 18, 1907, a contract was entered into for the construction of a landing pier at the southern end of Lake St. Francis, on lot 13, range 1, township Coleraine, some 13 miles east of the village of the same name. Contract price, \$4,800. It called for the construction of:—

A solid close-faced and stone-filled crib headblock, 70 feet long and 30 feet wide, outside face standing 14 feet 2 inches high in 5 feet of water at ordinary low level.

A stone approach, 325 feet long and 18 feet wide at top, with sides riprapped and sloped  $1\frac{1}{2}$  in 1.

A right of way from proposed public road, 53 feet wide and about 325 feet long, together with a deep water lot, 198 feet long and 132 feet wide, were bought from the provincial government.

Construction was begun in the middle of November, 1908, and completed at the end of the following January.

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## COTEAU DU LAC.

*(River St. Lawrence.)*

Coteau du Lac or St. Ignace, is a thriving village on the St. Lawrence, 3 miles from Coteau station, on the G.T.R., 36½ miles southwest of Montreal. Population, 500.

In 1888, the construction of a landing pier was commenced at this place and completed in 1889, at a cost of \$6,918.71. The structure consists of:—

1. A crib headblock, 101 feet long and 21 feet wide, with a crib extension, 40 by 47 feet, built from the middle of inner face; outer face standing 15 feet, built in 10 feet of water at ordinary low level.

2. A crib and span approach, 75 by 26 feet.

3. A freight shed of the full width of extension, 40 feet and 20 feet long with through passage way for vehicles.

During September and October, 1908, part of the flooring of headblock and half a dozen stringers of approach were renewed.

Expenditure, \$946.29.

The Crown has another wharf in the same locality, but on the southeast bank of the Soulanges canal.

## COTEAU DU LAC.

*(Soulanges Canal.)*

In October, 1900, the government began the construction of a wharf on the southeast bank of the Soulanges canal, near the swing bridge; it was completed in June following at an expenditure of \$2,738.54. The structure consists of:—

A pile block, 98 feet long, 30 feet wide, outer face standing 15 feet high in 9 feet of water at mean level of canal, and a storehouse, 18 by 24 feet, adjoining said block.

During September, October and November, 1908, some floor stringers were repaired and the whole flooring renewed in 6-inch concrete mixed 1-2-5 and properly reinforced; the cap piece was also renewed.

Expenditure, \$247.79.

## CROSS-POINT.

Cross-Point, Bonaventure county, is situated on the north shore of the Restigouche river, opposite the town of Campbellton, N.B. A ferry boat plies every fifteen minutes between Cross-Point and Campbellton.

During the fiscal year 1903-4, a wharf, 455 feet long by 20 feet wide, was built at that place; that wharf being approached at high water only. To facilitate the traffic, which is very heavy during the summer months, an extension, 390 feet long, was commenced during the fiscal year 1905-6, and completed in June, 1907.

During the fiscal year 1908-9, an iron guard, 648 feet long, was placed on both sides of the wharf, three guide piles were also driven at the outer end.

Total expenditure, \$162.

## DOUGLASTOWN.

Douglastown, situated in Gaspé bay, is a village of fishermen and farmers, standing on the rising ground at the south side of the entrance to the St. John river. Its population is between 1,600 and 1,800.

During the fiscal year 1907-8, the pier was lengthened by a crib of 80 feet, towards the shore, built up to low water level.



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During the last fiscal year, the new crib was completed and all of the old work raised from 2 to 3 feet, and the materials for a freight shed bought and prepared for construction.

Expenditure, \$4,066.60.

## EAST TEMPLETON.

East Templeton village, in the county of Wright, is a landing, 6 miles below the city of Ottawa.

At its session of 1908, parliament revoted \$1,000, to build the wharf commenced by contract, at this place, in 1907.

The contract was completed in April, 1908. During the extraordinary spring flood, the wharf was submerged completely. The debris on the high-level wharf was cleaned away in June, at a cost of \$7.

Expenditure during the year 1908-9, \$520.57.

## FABRE.

Fabre village, Pontiac county, on the east shore of Lake Temiskaming, 11 miles south of Ville-Marie, has a public wharf which was built in 1906-7.

The wharf suffered minor damages from the ice and heavy boat traffic. It was decided to improve the structure by sheeting the principal landing face with tamarck and placing fenders on the south side. Materials were procured at a cost of \$136.70, and a few piles were driven early in October with the Lake Temiskaming plant. Owing to the lateness of the season and the urgent work elsewhere requiring the men and plant, it was decided to complete the work during the early spring. A light was maintained on the wharf throughout the season at a cost of \$79.25.

Expenditure during 1908-9, \$215.95.

## FATHER POINT.

Father Point, in the county of Rimouski, is situated on the south shore of the St. Lawrence, 6 miles below the town of Rimouski. Most of the ocean liners call to land or take on their pilots. The point is one of the few places on the south shore of the St. Lawrence where deep water can be found at a relatively short distance from land.

A self-registering tidal gauge was established here some years ago by the Department of Marine and Fisheries. There are also a powerful compressed air fog-horn and an acetylene gas light-house.

In the year 1905, a wharf was completed, whose dimensions are 800 feet in length, 32 feet width at the top, with the outer end standing in 18 feet of water, at low water spring tides.

During the fiscal year ended March 31, 1909, the sum of \$562 was expended to place stones on the bottom along both faces and outer end of the wharf.

The work was performed in September, by the aid of a diver, with the view of preventing the scouring and undermining of the bottom by the waves and tidal currents.

A few pieces of hardwood sheathing were also replaced.

During the month of March, 1909, some repairs were done to the wharf, and, with a view to the raising and levelling of the superstructure, spruce was purchased for the sum of \$899.46.

Total expenditure for the last fiscal year, \$2,262.75.

## GARTHBY.

Garthby Station is a post village in Wolfe county, (Municipality de Beaulac), on Lake Aylmer, and a station on the Quebec Central Railway. Population, 950.

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• At the end of January, 1908, work was commenced on the construction of a landing pier at the foot of St. James street, near the Quebec Central Railway station.

The structure consists of:

1. A close-faced crib headblock, 40 feet long outside face and 30 feet wide, standing  $10\frac{1}{2}$  feet high in  $4\frac{1}{2}$  feet of water at lowest level.

2. A stone approach, 320 feet long, 12 feet wide, clear at top, with a 12-foot widening on eastern side half way between headblock and shore, leading to a 12-foot slip; sides riprapped and sloped one in one.

Up to March 13, 1908, when work was suspended on account of high water, the wharf had been about 80 per cent completed, at an expenditure of \$3,178.30.

Work was resumed in early August, 1908, and the structure completed at the end of the month with a further outlay of \$1,261.92.

#### GATINEAU POINT.

Gatineau Point, in the county of Wright, is at the intersection of the Gatineau and Ottawa rivers, 2 miles from Ottawa. In 1885-86, a cribwork wharf was built at this place for local traffic. The structure underwent repairs and was reconstructed in 1904-5.

In March last, the fenders were restored, and sheathed with rock elm at a cost of \$50.

#### GEORGEVILLE.

Georgeville, a post village in Stanstead county, 9 miles from Smith's Mills and on eastern shore of Memphremagog lake, 10 miles south of Magog station on the Canadian Pacific railway. Population, 300.

The landing pier was built by subscription from the several steamboat companies which kept it in repair until 1888, when its control was assumed by the government.

Extensive repairs were begun in September, 1908. The whole inner side of headblock, north of approach, with a 5 foot return on northern side, towards outside face, was renewed in concrete. This wall, 75 feet long, starts at low water level and stands  $5\frac{1}{2}$  feet high, with a depth of 3 feet at bottom. It is reinforced with corrugated iron bars embedded vertically every 8 feet and horizontally, opposite both retreats, 33 inches from outside face. Both sides of approach were covered with 4-inch concrete.

Expenditure, \$1,497.07.

As it stands to-day, the wharf consists of:—

(1) A crib headblock of irregular shape, 75 feet long outside face and from 20 feet wide at northern end to 42 feet near the approach;

(2) A stone approach 156 feet long and from 20 to 23 feet wide, with sides perpendicular;

(3) A freight shed, near northern intersection of approach and headblock.

#### GRANDE RIVIÈRE.

Grande Rivière, county of Gaspé, is the name of an important fishing centre, some 21 miles southwest of Percé.

One hundred and ten feet of roadway had to be repaired and protected by a timber sheathing.

The outside face was sheathed and sixty-one, 10 by 10, piles were driven, and timber was also bought.

Expenditure, \$2,772.78.

#### GRINDSTONE

Grindstone is a village on the south side of Grindstone island, 4 miles east of Etang du Nord.

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The population is composed mostly of Scotch farmers and Acadian fishermen.

During the last fiscal year, the foundation for a 100 by 30 foot freight shed was partly built.

Expenditure, \$1,688.03.

## GROSSE-ISLE HOSPITAL WHARF.

Grosse-Ile is situated in the river St. Lawrence, some 30 miles below Quebec.

It is used by the government as a quarantine station for the steamers coming up the river St. Lawrence.

During the last fiscal year, the flooring of the old portion of the wharf was completely renewed, as also the floor-stringers. The wooden embankment leading to this wharf was replaced by concrete work. This embankment consists of a concrete wall, 189 feet long by 10 feet high and another wall 57 feet long by 15 high. The macadam flooring of the embankment was repaired, where found necessary.

A new waiting-room and freight shed, surmounted by a lantern tower, was constructed on this wharf.

The work was actually commenced on September 2, 1908, and was discontinued on November 30, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$6,502.45.

## HIGH FALLS.

High Falls, Labelle county, a landing at the head of navigation, on the lower reach of the Lièvre river, is 24 miles above Buckingham.

At its session of 1908, parliament granted \$4,000 towards floating landings at different points on the Lièvre.

The floating landing at High Falls was built between September 14, and October 2.

The structure consists of a float, 35 feet by 25 feet, a warehouse, 12 by 16 feet, chained to the shore. The float is built of 8-inch flatted cedar, spiked to cedar cross-ties at 3 feet centres on cedar logs, laid heads and tails. Across the centre, a strip, 7 feet wide, is floored with 1-inch and 2-inch plank, outside and inside the warehouse, respectively. The ends of the warehouse are floored 8 inches higher, for dry storage at maximum loading. When light, the structure draws 26 inches of water and has a freeboard of 8 inches of solid timber, besides the capping and wheel guard. The float has been tested to 12 tons loading without being submerged, and has been found satisfactory in the handling of the traffic at this point.

Expenditure in 1908-9, \$239.31.

## HOPETOWN.

Hopetown is a post settlement of Bonaventure county, situated between St. Godfroy and Paspebiac; its population is mostly composed of fishermen.

During the last fiscal year 1908-9, the sum of \$398.14, was expended in repairs and continuation of the two descents to the beach built by the department in this municipality. The expenditure was thus divided:

Ross' Bank Road.—The descent to beach at that place, which was begun two years ago, was continued and nearly completed at the close of the season. The work during the last fiscal year was begun on October 13, and suspended on November 5.

Amount expended at that place, \$200.

Miller and Mann's Bank Road.—The descent to the beach was built by the government four years ago. During the last fiscal year, the sum of \$198.54 was expended in the construction of a small cribwork, 28 feet long, 18 feet wide and 6 feet high at the foot of the descent to protect it against the action of the sea. The construction was begun on August 21, and completed on the 28th.

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## HULL.

Hull, in the county of Wright, is an important industrial centre, opposite the city of Ottawa. The concrete and masonry wharf, built in 1902-3, on the Ottawa river, underwent repairs and was improved from September 8 to October 10.

The wrought iron hand railing was repaired and painted. The warehouse roof trimmings were painted. Three doors in the warehouse, were repaired and painted, and two windows were replaced by doors. A slip, 3 feet deep, 8 feet wide, with an activity of 1 in 4, was built into the low level landing and concrete inclines were built to the new warehouse entries.

Expenditure in 1908-9, \$624.91.

## ILE-AUX-COUDRES.

This island has an area of 30 miles and is situated in the river St. Lawrence, some 62 miles below Quebec. The distance from this island to the north shore of the river St. Lawrence is  $2\frac{1}{2}$  miles. Its population is 1,500.

During the past fiscal year, the slip on the western side of the wharf was completely renewed; some 100 toise of ballast stone were placed into the cribwork; half of the spruce sheathing of the western face of the wharf was renewed.

The work was commenced on September 3, and was completed on October 31, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$2,193.59.

## ILE-AUX-GRUES.

Ile-aux-Grues, or Crane island, is in the River St. Lawrence, 3 miles from the south shore, opposite Capc St. Ignace, in the county of Montmagny; it is about 40 miles below Quebec.

The inhabitants are chiefly engaged in farming.

Spring tides rise 20 feet; neaps, 12 feet.

During the fiscal year ended March 31, 1909, repairs were made to the planking of the wharf, built in 1902.

A middle pathway, 12 feet wide, was placed upon the whole length of the wharf, 750 feet, with spruce deals, 3 inches thick.

An opening, between two piers of the outer end, was closed at the request of navigators. Minor works were also performed.

The work was done between September 8 and 25.

Expenditure, \$585.10.

## ILE VERTE.

The village of Ile Verte, in the county of Temiscouata, is situated on the south shore of the St. Lawrence, about 15 miles below Rivière du Loup and 130 miles east of Quebec.

During the fiscal year ended March 31, 1909, heavy repairs were done to the wharf.

On the outer block, 250 feet of capping pieces were replaced and a surface of 960 square feet of flooring was renewed, with nearly all the stringers.

From the outer block, going shoreward, three courses of face timbers, and cross-ties, with the stringers and flooring, have been renewed on a length of 542 feet, by the whole width of the wharf, 20 feet.

The work which was done by day labour, was commenced on August 30, and suspended on October 30.

The amount expended was \$2,808.52.

## ISLE PERROT SOUTH.

Isle Perrot, about 7 miles long and 3 miles wide, is in the county of Vaudreuil, at the confluence of Rivers St. Lawrence and Ottawa, and between Lakes St. Louis and

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Two-Mountains. Two bridges, on the G.T.R. and C.P.R., connect it with Vaudreuil and Ste. Anne de Bellevue. Population, about 800.

In 1886-7, a contract was entered into for the construction of a pier on the south shore of the island, about  $1\frac{1}{2}$  miles below parish church, consisting of a crib block, 120 feet long, 30 feet wide, with return of 34 by 16 feet, in rear of east end, and sunk in 8 feet of water, at a distance of 581 feet from shore. It was completed in the year 1887-8, at a total cost of \$5,264.26. The approach was built in 1888-9 and 1889-90, at an expenditure of \$7,156.29.

During June, September and October, 1908, the two upper tiers of headblock and about one-quarter of the flooring were renewed; minor repairs were made to crib approach and guard railing; some ballast was also added to headblock.

Total expenditure during last fiscal year, \$597.03.

## KNOWLTON LANDING.

Knowlton Landing is a post village in Brome county, on Lake Memphremagog and a port of call of the steamers plying on the lake, 8 miles from Magog station, on the C.P.R., with which it is connected by steamer.

During the fiscal years 1891-2, an extension to the pile wharf, built many years before, was constructed. This extension of 51 feet by 75 feet was built of hemlock piles covered with stringers, and 3-inch planking, at a cost of \$971.22. There is a depth of 9 feet at low water at the end of the present wharf, which permits of steamers calling at all stages of water.

During the next year, six fender piles were driven along the front of the wharf, and three at each corner. A warehouse with waiting-room, 40 by 23 feet, was built on shore immediately west of the wharf, the whole at an expenditure of \$918.09.

In the fiscal years 1899-1900, all the stringers and planking were renewed, also the corner fender-piles, and some repairs made to the store-house and stone approach. The work was carried out by day labour at a cost of \$714.12.

During March, April and June, 1904, several caps and stringers were renewed and general overhauling of the flooring made.

During the last fiscal year, the extensive repairs, commenced in 1907, were completed; they consisted chiefly in renewing the whole of the flooring of headblock with 3-inch pine planks, and in rebuilding the approach entirely in stone. A 2-inch pipe railing with 6-inch cedar posts every 10 feet completing the improvements.

Work was commenced in June and completed in August, 1908.

As it stands to-day, the wharf is composed of a pile headblock 75 by 25 feet, standing 5 feet above low water level, and a stone approach 128 feet long and 20 feet wide at top, with sides ripped and sloped one in one.

The expenditure, during the last fiscal year, amounted to \$934.20.

## LAMBTON.

Lambton, or St. Vital de Lambton is a thriving post village in Beauce county, in rear of Lake St. Francis, 36 miles from St. Francois, the county town, and 15 miles from D'Israeli,  $7\frac{1}{2}$  miles from Lambton station (Q.C.Ry.). Population of parish, 2,100.

On February 15, 1907, a contract in the sum of \$7,750, was entered into for the construction of a landing pier at Lambton. It called for:

A solid close-faced and stone-filled crib headblock, 70 feet long and 30 feet wide, the outside face standing 20 feet high in 8 feet of water at extreme low level.

A stone approach, 320 feet long and 18 feet wide at top, with sides ripped and sloped  $1\frac{1}{2}$  in 1.

The work was begun in February, 1907, and finally completed August 25, 1908.

During the last fiscal year, the expenditure amounted to \$5,959.60.

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## L'ANSE À LA GROSSE ROCHE.

L'Anse à la Grosse Roche, in the parish of Sacre-Cœur, Chicoutimi county, is situated on the north shore of the River Saguenay, twelve miles from its mouth.

During the year 1904-5, a contract was awarded for the construction of a wharf, in the sum of \$9,000. The work was commenced at once and completed in 1905-6. The wharf was 265 feet in length by a width of 20, 30 and 40 feet, built of round logs, in three piers, the outer pier in the shape of an 'L,' 105 feet long and 40 feet wide, at outer end, where there is 16 feet of water, at low water spring tides.

An extension, 20 by 20 feet, was built; a freight shed constructed, and the approach built.

The work done during the fiscal year 1908-9, was as follows: A pier, 30 feet in length by 25 feet in width, which had been demolished by the ice, last spring, was rebuilt and filled with stone; a new sheathing was put on the shore side of the wharf; the slip was raised, and big boulders were blasted around the wharf, so that the boat could land without danger.

Work was started in August and discontinued in November.

Total expenditure for the fiscal year ended March 31, 1909, \$941.43.

## LA SALETTE.

La Salette is a village in Labelle county on the east bank of the Lièvre river, 18 miles above Buckingham. On April 26 last, a landslide obliterated part of the village and blocked the river completely. In order to restore traffic, a floating landing was built below the obstruction, between April 27 and May 13. The structure consists of a float, 25 feet by 31 feet built of two tiers of close-laid cedar, upper side flatted, anchored to shore. A shed, 16 by 25 feet, was built on the bank for storage of freight.

At its last session, parliament granted \$4,000 towards floating landings on the Lièvre.

Owing to the landslide completely obstructing river traffic at La Salette, 6 miles below the head of navigation, on the lower reach, it became necessary to grant a bonus towards the maintenance of traffic, which affects several important settlements. Agreements were duly signed between the department and the parties concerned, for the services required. \$200 was paid to Capt. Bothwell for placing the steamer *Mildred* above the landslide. A further amount of \$241 per month, was paid him from June 1 to the end of the navigation season, towards the extra cost of a second crew portaging and looking after freight and passengers at La Salette. For the boat landing, a right-of-way to the public road was obtained at \$50 per annum. In May, temporary services of caretaker for wharf and freight cost, \$52.25.

Expenditure during 1908-9, \$726.17.

## LAVALTRIE.

Lavaltrie is a post village in Berthier county, on the St. Lawrence river, 8 miles from Lavaltrie road station on the Canadian Pacific railway, 44 miles northeast of Montreal. Population, 998.

In November, 1907, materials were bought to repair and enlarge the old wharf purchased the preceding year from the Richelieu & Ontario Navigation Company for \$1,800. This property is composed of:—

A crib headblock, 65½ feet by 31 feet, at bottom, and 56 by 31 at top;

A crib approach, 150 by 19 feet, and a right-of-way 50 by 130 feet, leading to public road.

The work done during the last fiscal year was as follows: the headblock was raised to one foot above low water level and rebuilt with a crib enlargement of 40 by 40 feet on downstream side; the old approach was protected by an addition of a

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crib icebreaker, inclined  $1\frac{1}{2}$  in 1, and the three upper tiers were renewed; the roadway leading to the wharf was also improved.

Amount expended, \$4,305.97.

## LES BERGERONNES.

Les Bergeronnes is situated on the north side of the St. Lawrence river, 18 miles below Tadousac.

In Les Bergeronnes, there are two rivers called Les Grandes Bergeronnes, and Les Petites Bergeronnes, which are navigable for schooners, about 3 miles, at high water; on both rivers there is a sawmill. The channels of the rivers were obstructed by boulders.

At Les Grandes Bergeronnes, during the fiscal year 1908-9, the work done was the removal of boulders at the mouth of this river so as to make a channel for sailing boats. Work was started in August and was discontinued in October.

During the last fiscal year, the channel at the mouth of River les Petites Bergeronnes was enlarged and boulders were removed on a distance of one mile and a half. The work started in September and was discontinued at the end of October.

## LES CUISSSES D'ALMA.

Les Cuisses d'Alma, in the Petite Décharge of Lake St. John, is 3 miles from the lake, in the parish of St. Joseph d'Alma, and some 7 miles from the village.

There are three rocks called Cuisses d'Alma, and an island obstructing the Petite Décharge.

In 1901-2, blasting was done on the east side.

Expenditure, \$575.92.

In the year 1902-3, the east side was completed and a portion of the west side was done.

Amount expended, \$1,229.37.

During the year 1903-4, the blasting was continued and completed on the two points obstructing the Petite Décharge, and work was begun on the island.

Amount expended, \$1,477.59.

During the year 1904-5, the blasting of the little island below was continued.

Expenditure, \$994.31.

During the year 1905-6, the blasting of the little island was continued.

Expenditure, \$1,015.96.

During the year 1906-7, the work done was the continuation of the blasting at the island below 'Les Cuisses,' to enlarge the channel.

Expenditure, \$996.02.

During the year 1907-8, the blasting was continued to enlarge the channel.

Expenditure, \$994.50.

During the year 1908-9, the work done was the continuation of the blasting commenced in 1901-2, on the little island, below Les Cuisses d'Alma, to enlarge the channel.

The expenditure, during the fiscal year ended March 31, 1909, amounted to \$996.77.

## LES EBOULEMENTS.

This village is situated on the north shore of the River St. Lawrence, in the county of Charlevoix, 70 miles below Quebec.

During the last fiscal year, the eastern corner of the wharf that was opened by a steamer in landing was repaired and reinforced, the western corner of the wharf was also reinforced.

The work was executed from 14 to July 23, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$128.85.

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## LES ESCOUMAINS.

Les Escoumains, in the county of Saguenay, is situated on the north shore of the River St. Lawrence, 21 miles below Tadousac. A very important saw-mill, the property of the Saguenay Lumber Company, is located there.

On May 7, 1904, a contract was entered into with Messrs. Bernier & Beaulieu for the construction of a wharf.

Work was commenced on July 25, 1904, and completed in the following year; it consisted of a wharf 350 feet long by 25 feet wide, being 30 feet in height and 8 feet of water at the outer end.

The work is of round logs open-face cribwork, with stringers 12 inches by 12 inches and a planking of 3 inches. The wharf is sheathed with 4-inch planking, fenders 8 inches by 10 inches are placed at every 8 feet, the whole is fully ballasted with stone.

The blasting of boulders at the entrance to harbour was also continued.

The work done during the fiscal year 1908-9, was the completion of the 200-foot extension commenced the previous year.

Total expenditure during the last fiscal year amounted to \$6,547.50.

## LIMOILLOU.

Limoilou is a small town situated on the north shore of the River St. Charles, opposite to Quebec.

On September 16, 1907, a contract was entered into for the construction of a landing and protection wall for the sum of \$2,600.

The work consists (a) of an open-faced stone filled timber crib of a total length of 90 feet and a width of 40 feet having, at the southern end, a culvert built of close-faced timber. The timber used is pine and spruce ;

(b) An earth embankment at each end of the wooden cribwork, the north portion of said embankment having a length of 174 feet and a width of 40 feet at the top, having the western side in ripped stones and sloped one in one. The whole of the top of this landing and protection wall is formed of an 8-inch layer of macadam stones covered with a 4-inch layer of gravel and sand. These layers are properly laid and hardened with a 2,000-pound roller. The western side of the earth embankment is made of large hand-laid stones having at least 30 inches in length and 18 inches wide and deep embedded alternately endwise and sidewise and perpendicular to the slope.

During the fiscal year 1907-8, the whole of this work was completed apart from the macadam covering. This macadam covering was completed during the fiscal year 1908-9.

On April 8, 1908, a second contract was entered into for the prolongation of the landing and protection wall for the sum of \$400.

The work consists of an earth embankment of a total length of 67 feet and a width of 40 feet at the top, having the western side ripped stones and sloped one in one. The whole of the top of this work is formed of an 8-inch layer of macadam stones covered with 4-inch layer of gravel and sand. These layers are properly laid and hardened with a 2,000-pound roller. The western side of the earth embankment is made of large hand-laid stones having at least 30 inches in length and 18 inches wide and deep embedded alternately endwise and sidewise and perpendicular to the slope.

This second contract was executed and completed during the last fiscal year.

Expenditure for fiscal year 1908-9 was \$2,698.80.

## L'ISLET.

The village of L'Islet, in the county of the same name, is situated on the south shore of the St. Lawrence, 50 miles below Quebec. Spring tides rise 21 feet; neaps, 13 feet.



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The wharf has a length of 1.105 feet and a width of 31 feet, with a head block 116 feet wide. It was substantially built with close-faced cribwork; the superstructure is now in an advanced state of decay and altogether worn out.

During the fiscal year ended March 31, 1909, temporary repairs were performed. On the west and north sides of the headblock, three courses of face-timbers were renewed; the stairways were repaired and made serviceable, the pavement on the outer end was repaired and many stringers were replaced, twenty pieces of hardwood sheathing were renewed, with also three mooring posts. Other minor works have been performed all along the wharf. The work was done by day labour, between August 22 and September 29.

Amount expended, \$820.56.

## LOTBINIERE.

The village of Lotbiniere, in the county of the same name, is situated on the south shore of the St. Lawrence, 40 miles above Quebec. It has no railway communication, and entirely depends, for exchange of supplies, on bateaux and steamers from Quebec.

On August 10, 1908, authority was received to expend by day labour the sum of \$1,200 in improving the approaches to the government wharf. Work was commenced on August 13 and completed on October 22, it consisted in raising and levelling the inshore roadway, and in constructing a substantial and permanent culvert at the creek crossing the roadway.

Total amount expended during the last fiscal year was \$982.09.

## MAGUASHA.

Maguasha is situated at the head of the Baie des Chaleurs, in the county of Bonaventure, opposite the town of Dalhousie, N.B., some 12 miles west of Carleton.

There is a ferry between Dalhousie and Maguasha.

The wharf was constructed during the fiscal year 1904-5, at a cost of \$7,500.

Spring tides rise 9 feet 5 inches.

During the last fiscal year 1908-9, the shore pier of the wharf, which had sunk, was raised up two feet, and the flooring renewed. In order to protect the stone approach, which was washed out, a round timber crib, 27 feet long, 12 feet wide and 7 feet high, well ballasted, sheathed and covered with 5-inch planks, was constructed at the west side of the approach. A guard was placed on the east side of the wharf from the shore to the slip, a davit was also placed at the outer end of the wharf.

The work was carried out by day labour at a cost of \$350.30, was commenced on the 6th and completed on October 30.

## MARIA.

Maria, a prosperous village on the north shore of the Baie des Chaleurs, county of Bonaventure, is a station on the Atlantic and Lake Superior railway, about 10 miles northeast of Carleton. Population, 2,300. Spring tides rise 9 feet.

During the fiscal year, 1902-3, the department constructed a wharf. The structure has a total length of 932 feet, and a uniform width of 20 feet.

At the last session of parliament, the sum of \$3,000 was voted towards an addition to the present wharf.

During the fiscal year 1908-9, the sum of \$2,471.71 was expended to buy stone and timber.

## MARIA CAPE.

Maria Cape, at the west part of the parish thus called, Maria Cape; during the high tides of the spring and fall, the sea washes out the bank and causes frequent landslips which render the public road dangerous.

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To avoid accidents and to protect properties, a round-timber construction, 330 feet long, 6 feet wide and 4 feet high, well ballasted with stone, was placed at the foot of the cape.

Total expenditure, \$742.15.

## MASSON.

Masson, Labelle county, also known as Buckingham Junction, 18 miles east of Ottawa, is the outlet for a district having a population of 6,000 inhabitants. The permanent wharf on the Ottawa river, near the mouth of the Lièvre river, built in 1905-6, underwent certain repairs between September 12 and October 14.

The fenders (hemlock) were renewed in rock elm. The steps in the high level slip, which interfered with loading of horses, were shifted. The railing was straightened and high level approach was regraded. The low level freight shed door repaired and the concrete floor was raised for better drainage.

Expenditure in 1908-9, \$377.02.

## MATANE.

The village of Matane, in the county of Rimouski, is situated on the south shore of the St. Lawrence, at the mouth of the River Matane, 240 miles below Quebec, and 30 miles from Little Metis, the nearest point on the Intercolonial Railway.

It contains extensive sawmills and important shipments of lumber are made to European markets from this place.

A railway is now under construction to connect Matane with Ste. Flavie station on the I.C.R.

During the fiscal year ended March 31, 1909, the breakwater, standing on the west side of the mouth of the River Matane and running parallel to it, having been badly damaged during a heavy storm, was thoroughly repaired. It consists of nine piers connected by platforms, the whole aggregating to 500 feet in length. All the superstructure was renewed, in some places to a depth of 6 feet; the front sheet-piling was also repaired, and a new decking was laid on; 6 toise of stone were added, where needed.

The work done by day labour, was commenced on August 17 and completed about January 15.

Repairs were also done to the shed standing on the government wharf inside the river; ladders were placed on the breakwater and on the wharf. Spring tides rise 15 feet; neaps, 8 feet.

The whole expenditure for the year amounted to \$2,473.35.

## MISTOOK.

Mistook, in the township of Delisle, is situated on the Grande Décharge of Lake St. John, in the county of Chicoutimi. It is also called St. Cœur de Marie.

The wharf at this place, commenced in 1904 and completed in 1907, is built on piers of 20 by 30 feet, with spaces of 25 feet; the last pier is 30 by 30, making a total length of 402 feet; the average width is 22 feet and 40 feet at outer end; there is 8 feet of water at low water.

The work done during the fiscal year 1908-9, consisted in replacing the flooring for a length of 182 feet, and in sheathing and raising four piers which were also fully ballasted with stone.

Work started on August 1 and was completed on October 1.

The total amount expended during the fiscal year was \$1,980.04.

## MONTMAGNY.

Montmagny, in the county of the same name, is on the south shore of the St. Lawrence, 37 miles below Quebec.

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It is a thriving little town of over 2,000 inhabitants; important shipments of lumber are made by the Price Bros. Co. to European markets.

Besides a pulp mill, there are also two foundries and iron works. The town is built on both sides of Rivière du Sud, which has a perpendicular fall of 20 feet and empties into the St. Lawrence; below the fall, the river expands and forms what is called the 'basin,' affording shelter from winds for vessels of moderate draught.

Near the entrance of the basin, on the west side of it, stands the government wharf, but, owing to certain conditions of the bottom and the want of proper shelter, this wharf does not meet the requirements of the place.

To accommodate the growing traffic and to provide for the necessary shelter, the department decided to build another wharf at the rear end of the basin, and on December 30, 1907, a contract was entered into for the construction of a landing pier of the following description: a shore section or approach open-faced, 220 feet in length and 20 feet in width, together with an outside section, close-faced, 125 feet long and 30 feet wide on top, with a batter of one in twelve on the sides and outer end; the two sections forming an angle of  $114^{\circ} 50'$ . Contract price, \$11,500.

The work was commenced on the first day of June, 1908, and the final estimate was forwarded on September 29.

Spring tides rise, 21 feet; neaps, 13 feet.

During the month of September, the sum of \$96.56 was expended to make some repairs to the flooring of the outside wharf, and to the building standing on shore near the wharf.

## MOOSE BAY.

Moose Bay is a small settlement about midway between the wharfs of Piopolis and Woburn, near the southwestern end of Lake Mégantic.

The wharf commenced in March, 1908, was completed at the end of March, 1909.

The structure consists of:

1. A crib headblock, 40 feet outside face and 30 feet wide, open-faced under water and close-faced above, standing 13 feet high in 7 feet of water at lowest level, whole headblock covered by a shelter with shingle roof resting on posts.

2. A crib approach, 105 feet long and 20 feet wide, also open-faced under water and close-faced above, with guard railing on both sides.

3. A stone approach, 65 feet long and 20 feet wide at top, with sides ripped and sloped one in one.

Total expenditure during last fiscal year, \$2,094.28.

## MURRAY BAY.

Murray Bay is situated in the county of Charlevoix, on the north shore of the River St. Lawrence, 83 miles below Quebec.

During the last fiscal year, the northeast corner of the wharf which had been cut away by the ice, was completely renewed, from low tide mark to the flooring, and further reinforced by eight fenders of rock-elm, 12 inches square.

The work was commenced on October 14, and completed on December 5, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$1,948.93.

## NEW CARLISLE.

New Carlisle, the shiretown of the county of Bonaventure, is situated on the north shore of the Baie de Chaleurs, 65 miles from Campbellton, N.B. It contains three churches, two hotels, several stores, a telegraph office, &c. It is the terminus of the Atlantic and Lake Superior Railway, and the starting station of the Quebec and Western Railway.

During the last fiscal year 1908-9, the sum of \$4,648.56, was expended in the construction of a round-timber cribwork, 120 feet long and 20 feet wide, along the east

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side of the wharf. At the close of the season, the crib was built up to 2 feet above high water and well protected for the winter.

The construction, which was carried on by day labour, was begun on August 19, and suspended on November 25.

Total amount expended, \$4,648.56.

## NEW CARLISLE WEST.

New Carlisle West, also called Babin's road, is a meeting place for fishermen and is situated about 3 miles west of New Carlisle village, county of Bonaventure.

During the fiscal year 1907-8, in view of the construction of a small breakwater at that place to shelter fishing boats, the sum of \$300 was expended to purchase timber.

During last fiscal year 1908-9, a small breakwater, 100 feet long, 14 feet wide and 12 feet high, was built. It is a round-timber construction, well ballasted with stone.

The construction was carried on by day labour, at a cost of \$449.74; was begun on the 2nd and was completed on the 31st of October.

## NEWPORT.

The village of Newport, in the county of Gaspé, is situated at the mouth of the river of the same name, on the north shore of the Baie des Chaleurs, 88 miles east of Campbellton, N.B.

The top of the wharf, damaged in the fall of 1907, was repaired at a cost of \$408.35.

## NEW RICHMOND.

New Richmond, Bonaventure county, is situated on the north shore of the Baie des Chaleurs, some 60 miles from Metapedia, and is a station on the Atlantic and Lake Superior railway. It contains two churches, several schools, shingle mills, grist mill and one planing mill. It is one of the largest lumber manufacturing centres in the Baie des Chaleurs. Large quantities of dressed lumber and railroad ties are shipped to the United States.

Population, 2,500. Spring tides rise 8 feet.

In 1904, a landing pier, consisting of a stone approach, 15 feet long and 20 feet wide; a crib work abutment, 20 by 20 feet; 19 cribwork piers, 20 by 20 feet, and an outer block, 100 feet long by 30 feet wide, placed at intervals of 20 feet and spanned over with stringers was completed.

At the last session of parliament, the sum of \$2,000 was voted towards an addition to this landing pier.

During the last fiscal year, 1908-9, the sum of \$2,001.23 was expended to purchase timber.

## NORWAY BAY.

Norway Bay, Pontiac county, is located on the north shore of Chats lake, an expansion of the Ottawa river. There is a ferry traffic across to Sand Point, Ont. This place is a summer resort of some importance.

At its session of 1908, parliament granted \$3,000 towards the construction of a pilework wharf.

Owing to the site on the Upper Ottawa Improvement Company's wharf becoming available in the fall of 1908, it was decided to defer construction.

In March, 1909, authority was given to expend \$100 on a temporary landing at this place. Materials were procured at a cost of \$27.25. Construction of said temporary landing will take place at low water during the coming season.

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## NICOLET HARBOUR.

Nicolet, a flourishing town in Nicolet county, at the foot of Lake St. Peter, on the Nicolet branch of the Interecolonial Railway, 6 miles from St. Gregoire on the Grand Trunk Railway and 8 miles northeast of Montreal. Population, 2,442.

In order to protect the schooners loading in the harbour from the force of storms on Lake St. Peter, a jetty was commenced in 1881, and extended in successive years. It was originally 3,500 feet long, made of two rows of close piles, 13 feet distant, and filled with stone. It stood 4 feet above low water with an average height of 5½ feet.

Out of the expenditure 1904-5, a small wharf was built during February and March on the river bank about 1½ miles north of Nicolet, opposite the old Ball mill. It was built of close-faced stone-filled cribwork, 80 feet long, including ice-breaker, inclined 1½ in 1, and 31 feet wide. It will be of great utility to the Nicolet trade, as this point is the nearest to the town that boats of 6 feet draught can reach safely.

During June, July and August, 1908, some 410 toise of stone were added to jetty, and a freight shed, 52 by 32 feet, was erected on the Nicolet wharf, built in 1904-5.

Expenditure during last fiscal year, \$154.

## NOTRE DAME DU LAUS.

Notre Dame du Laus, in Labelle county, is 6 miles from the head of navigation (at the foot of Rapids des Pins), on the second reach of the Lièvre river, 46 miles above Buckingham.

At its session of 1908, parliament granted \$4,000 towards wharfs at different points along the Lièvre river.

A floating landing, similar to the structure at High Falls (detailed elsewhere) was built here, between October 20 and November 11.

Expenditure at Notre Dame du Laus 1908-9, \$441.89.

## NOTRE DAME DU PORTAGE.

On the south shore of the St. Lawrence, six miles west of Rivière du Loup, in the county of Temiscouata, is situated the village of Notre Dame du Portage, the place is much resorted to, by tourists, in summer. Spring tides rise 9 feet, neaps, 13 feet.

The construction of the wharf, commenced in the year 1904, was completed during the fiscal year ended March 31, 1909, by the addition of a block, 100 feet long, 30 feet wide, by a height of 23 feet; it is placed as an 'L' at the outer end of the wharf and running towards the east. The work is closed-faced, with upright posts every 20 feet, screw bolted to the face timbers, and is thoroughly ballasted.

A combined waiting room and rain-guard, 30 by 20 feet, was constructed on the head of the wharf.

The road, leading from the highway to the wharf, was built and fenced on both sides.

The wharf, as now completed, is 400 feet in length, 28 feet in width, with a head block, 30 by 100 feet, the height at the outer end being 23 feet.

The work commenced on September 1, 1908, was carried on during the months of September, October and November, and completed in March, 1909.

The expenditure during the last fiscal year amounted to \$5,398.18.

## PASPEBIAC.

Paspebieac, a sea-port and a port of entry, is also the most important fishing station of the county of Bonaventure, it is for over a century the headquarters of the great fishing firm of C. Robin, Collas & Co.

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During the last fiscal year 1908-9, the repairs begun the year before, were completed, and consist of the renewing of the flooring and in close-pile sheathing the north side of the wharf.

The work was carried on by day labour, was commenced on September 7 and was completed on November 9.

Amount expended in 1908-9, \$1,709.07.

#### PASPEBIAC EAST (PORTAGE).

Paspebiac East, also called Portage, Bonaventure county, is the most advantageous position for mooring fishing vessels, situated  $\frac{3}{4}$  mile eastward of the bank of Paspebiac, it is the meeting place of all the fishermen of the coast.

During all the fishing season, a flotilla of vessels of all dimensions are stationed here; unfortunately the mooring place does not provide sufficient shelter, every year a large number of these boats are driven ashore and wrecked, and those repeated losses constitute a disaster for the fishing industry.

In the interest of the trade and of the inhabitants in general, at the last session of parliament, it was decided to construct a breakwater and the sum of \$3,000 was voted for that purpose.

During the last fiscal year, 1908-9, the sum of \$3,143.11 was expended to purchase the site and materials for the proposed breakwater.

#### PERCÉ.

Percé the county town of Gaspé, is situated on the Gulf of St. Lawrence, 36 miles from Gaspé Basin.

One of the slips having been damaged last fall, had to be repaired and the freight shed being damaged and partly buried by the gravel thrown up by a heavy storm, had to be raised 3 feet and repaired at a cost of \$218.36.

#### PETIT BONAVENTURE.

Petit Bonaventure, a post settlement in the municipality of St. Bonaventure, county of Bonaventure, is situated about 4 miles west of the village of St. Bonaventure.

During the fiscal year 1907-8, the entrance to the river, which was choked and closed up by a sand bar, was opened. A protection pier 83 feet long, 12 feet wide and 8 feet high was built on the east side of the river, at a cost of \$499.35.

During the fiscal year 1908-9, the improvement of the river was continued by the construction of a protection cribwork on the west side; it is 100 feet long, 18 feet wide, 7 feet high. The work was done by day labour, and was begun on October 20 and suspended on November 10.

Total expenditure during last fiscal year, \$1,540.88.

#### PETITE RIVIÈRE EST.

Petite Rivière Est is a post settlement in Gaspé county, 56 miles from Paspebiac, on the Atlantic, Quebec and Western Railway.

A freight shed, 20 feet by 30 feet, was built and completed at the landing of Petite Rivière.

Expenditure, \$75.50.

#### PICHE POINT.

Piche Point, Pontiac county, on the Quebec shore of Lake Temiskaming, opposite Haileybury, is the landing for Guigues, a prosperous farming district which sends supplies to the mining region on the Ontario side.

At its session of 1908, parliament appropriated \$11,500 for a pilework wharf at this place.

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A contract was entered into for the construction of this work. Operations commenced April 20 and the wharf was completed October 16.

This structure of pilework extends out into Lake Temiskaming 342 feet, drawing  $8\frac{1}{2}$  feet of water and standing 13 feet above low water level, fully protected by continuous ice-breaker. The landing faces are sheeted and provided with fenders, battering 8 on 1. There are two slips and a freight shed.

Expenditure, 1908-9, \$9,501.31.

## POINTE A ELIE.

Pointe a Elie is the extreme southeasterly point of Allright island, 2 miles east of the House Harbour Catholic church.

The steamer *Amelia* calls at Pointe a Elie for mails and freight and for shelter during the northeasterly gales.

During the fiscal year 1902-3, a length of 115 feet by  $22\frac{1}{2}$  feet in width of the pier proper was built; 850 feet of roadway, from 25 to 50 feet wide and of an average height of 9 feet, was also built of stone with a timber facing held in place by walings, posts and cross-ties.

During the fiscal year 1903-4, one hundred and ninety-five feet by  $24\frac{1}{2}$  wide, was built.

During the fiscal year 1904-5, the last crib, 100 feet long by 26 feet wide, was built up to 18 inches to low water level and secured into position.

During the fiscal year 1906-7, the 100-foot crib was placed into position and completed, and a new crib of 100 feet was commenced ashore and the roadway widened in places by blasting and removing solid rock.

During the fiscal year 1907-8, the outside 200 feet were built up 18 inches to coping, the whole of the outside face, besides the outside crib, was sheathed with black birch, the outside face work of the shore end for a length of 54 feet was raised  $3\frac{1}{2}$  feet and a wing of 42 feet long by 11 feet high was built on the east side to protect top of the bank.

During the last fiscal year, the crib, partly built last year, was launched, brought into position and completed; a new crib was started; the roadway was repaired opposite the landslide and extended 100 feet, and part of the materials needed for next year's operations, timber and stone ballast, placed in safety for winter.

Spring tides rise 4 feet; neaps, 2 feet.

Expenditure, \$6,529.53.

## POINTE AUX ESQUIMAUX.

Pointe aux Esquimaux, in the united counties of Chicoutimi and Saguenay, is situated on the northern shore of the St. Lawrence, 525 miles below Quebec. Pointe aux Esquimaux is the *chef-lieu* of the north shore and most important trading post of that region for traffic in fur, fish and oil.

The wharf, purchased by the government in 1895, and extended in the following year, is now 213 feet long by a width of 30 and 40 feet, with an outer block 30 feet in length, 68 feet in width and 50 feet in height; and there is a depth of 40 feet of water at low spring tides.

During the fiscal year 1908-9, petty repairs were made to the wharf.

Amount expended in the fiscal year 1908-9, \$303.42.

## POINTE-AUX-TREMBLES. (EN BAS.)

Point-aux-Trembles is situated in the county of Portneuf, on the north shore of the River St. Lawrence, some 20 miles above Quebec.

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On February 8, 1908, a contract was entered into for the completion of the wharf, contract price, \$22,490.

This work consisted in a substructure of two contiguous cribs of close-faced crib-work that were placed close to the first part of the wharf; also a timber superstructure of a length of 141 feet measured on its middle axis.

This work was commenced and completed during the last summer season.

All the boulders in the vicinity of this wharf, which were dangerous to navigation were removed between October 28 and December 5, 1908.

The total expenditure amounted to \$16,103.09.

#### POINT FORTUNE.

Point Fortune, a post village in Vaudreuil county, on the River Ottawa, and on the Montreal and Ottawa short line of the Canadian Pacific Railway, 7 miles from Grenville and 45 miles northwest of Montreal.

In January, 1909, a pontoon, 16 feet square and 28 inches high, and intended to serve as a floating dock for the ferry, was built at Point Fortune.

Expenditure, \$279.01.

#### POINTE MACQUEREAU.

Pointe Macquereau, is the last fishing settlement situated at the eastern limits of the county of Bonaventure.

During the fiscal year 1908-9, the sum of \$200 was expended in the construction of a descent to the beach at that place.

The work was begun on the 12th and was completed on October 24. The descent is 200 feet long and 18 feet wide.

#### POLTIMORE.

Poltimore, Labelle county, is a small settlement near the west bank of the Lièvre, opposite La Salette, where great destruction took place on April 26, 1908.

The landing at this point being destroyed, another float was provided by the department for the dairy and other traffic to and from Poltimore. The structure consists chiefly of an old stone lifter float, 16 by 31 feet, built some seven years ago by the department, which drifted downstream after the landslide surge. It was restored and floored over. The cost of this work is included in the expenditure noted elsewhere for the La Salette landing, and covered by the appropriation of \$4,000 for floating landings on the Lièvre.

#### PORT DANIEL.

Port Daniel, Bonaventure county, is situated on the north shore of the Baie des Chaleurs, 45 miles from Percé. It is an important settlement of 1,200 inhabitants, mostly engaged in the fishing industry.

Spring tides rise 7 feet.

During the last fiscal year, the sum of \$2,498.70, was expended in making repairs to the portion of the wharf built in 1889. These repairs consist in the renewing of two courses of face timber, both sides of the wharf, and replacing the ties, stringers and flooring upon a distance of 350 feet by a full width of the wharf. These repairs were executed by day labour, on August 21, and suspended on December 17.

A sum of \$100 was also expended to repair a descent to the beach situated near by.

The work was commenced on the 2nd, and was completed on the 9th of October.

#### PORT DANIEL WEST.

Port Daniel West is one of the richest settlements of the Baie des Chaleurs, situated between Shigawake and the Baie of Port Daniel, county Bonaventure.



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During the fiscal year 1908-9, the sum of \$300 was expended towards repairs and improvements to the three descents to the beach at that place.

The expenditure was made as follows:

*McPherson's Beach.*—The sum of \$50, to repair the cribwork placed at the foot of the descent.

The work was begun on September 25, and was completed on October 1.

*Dow's Beach.*—The sum of \$100, to remove large boulders which prevented boats to land; the descent was also repaired on its full length.

Work was commenced on September 17, and completed on October 14.

*Dea's Beach.*—The sum of \$150 was expended in the construction of a protection crib at the foot of the descent; it is 25 feet long and 18 feet wide.

The construction was begun on the 13th, and was completed on September 24.

## PORT LEWIS.

Port Lewis, a post village and port on Lake St. Francis, in Huntingdon county, is 8 miles distant from Huntingdon, with stations on the G.T.R. and the N.Y.C., and 64 miles southwest of Montreal.

The upper structure of the old wharf, which was entirely dilapidated, was removed to low water level and rebuilt in solid cribwork for a height of 6 feet. The wharf has a length of 100 feet parallel with the channel, by a width of 34 feet for 58 feet of its length, and a width of 20 feet for the remaining 42 feet. The depth of water at the outer face is 8 feet. The approach, from shore to the wharf, is a solid embankment of stone, 75 feet long and 20 feet wide, with slopes of one in one at the sides. There has been erected at the angle of the upstream portion of the wharf and of approach, a store-house 20 by 24 feet.

During September, October and November, 1908, the two upper tiers of front face and sides and the walings of headblock were renewed; the corners strengthened; some stone ballast added, and the wooden flooring replaced by 6-inch concrete laid over the stone. Expenditure \$1,016.78.

## QUEBEC HARBOUR.

At the end of the fiscal year 1907-8, the work under previous contracts with Messrs. E. Dussault & Co., comprising the construction of the eastern half of a wharf, 1,460 feet long, on the river front of the harbour, and 300 feet wide, were completed, with the exception of about 6,000 cubic yards of earth filling, which is not yet completed.

On August 8, 1908, a new contract was entered with the same contractors, for the construction of the western half of the wharf, with a bulkhead 400 feet long, running parallel with the Louise embankment, the total length of the new work being 1,526 feet, of the same class of work specified for previous contracts, for the bulk sum of \$746,792.99.

The work consists of timber cribwork, 46 feet 6 inches wide at the base; 21 feet wide at the top; filled with stone ballast, and built to a height of 3 feet above low water spring tides. The cribs are founded on a bed of rubble stone, 4 feet in thickness, deposited on the sand bottom previously dredged to a depth of 46 feet at low water spring tides, leaving an available depth of 42 feet at the outer face of the cribs.

From the level of 3 feet above low water, the superstructure, 21 feet high, is built of concrete, 16 feet wide at the base, 4 feet wide at top and stands 6 feet above high water spring tides, the back filling is procured from dredging done in the vicinity of the work where the depth of water is to be increased before the wharf can be used.

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The timber employed in the construction of the cribs is spruce, 12 inches square, substantially built with vertical posts binding together the face timbers and the cross and longitudinal ties, the outer face of the cribs is sheathed horizontally from the bottom with elm timber 12 inches thick.

During the summer season of 1908, the foundation for the new work was excavated on a length of 570 feet, 70 feet wide; two cribs, forming a total length of 320 feet, were sunk in place and filled with ballast; the concrete superstructure was built on a length of 200 feet, and about 27,000 cubic yards of earth filling was done; two other cribs, each 165 feet long, were also built to a height of 15 feet. The work was started on May 11, 1908, and continued without interruption until November 30, when it was closed for winter.

The amount expended during the fiscal year 1908-9, on this work, was \$300,877.47.

#### QUEBEC CUSTOM HOUSE WHARF.

The flight of steps of the custom house wharf, in Quebec harbour was thoroughly repaired.

The work consisted in replacing 14 of the steps with their supports and the cross-ties; the length of these steps is 80 feet.

The work was executed from October 24 to December 5, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$1,624.21.

#### QUEBEC HARBOUR—CUSTOM HOUSE BASIN.

The custom house basin is situated in front of the custom house building, in the harbour of Quebec.

During the present fiscal year, this basin was dredged by the dredge *Ottawa* to a depth of 15 feet, at extreme low water, spring tides.

#### REPENTIGNY.

Repentigny, a post village in L'Assomption county, on the St. Lawrence, with port on that river at the quay de Repentigny. Its station, 1½ miles distant, is St. Paul l'Ermite, on the Canadian Northern Quebec Railroad.

On August 10, 1904, a contract was entered into for the construction of a wharf opposite Juneau property about ½ mile from the village, at the price of \$10,975. It called for the building:—

1. Of a close-faced crib headblock, 73 feet 6 inches long by 40 feet wide, standing 19 feet high in 7 feet 3 inches of water at lowest level.

2. Of a close-faced crib approach, adjoining headblock, of a length of 230 feet and a width of 16 feet.

3. Of a stone approach, 435 feet long and 18 feet wide at top, with slopes of one in one on both sides; the whole forming a length of 705 feet.

In order to place the proposed wharf as near as possible to the centre of the village, a change of site was decided and that opposite the Téléspore Thouin property chosen, thereby lengthening the stone approach from 435 feet to 748 feet, and the whole structure from 705 to 1,018 feet, but without modifying in any way its other dimensions. A further arrangement was made in December with the contractors, whereby they agreed to the change at an extra of \$5,039 above original contract price.

The work was begun in January, 1905, and finally completed in September, 1908. Expenditure during last fiscal year, \$1,584.44.

#### RICHELIEU RIVER.

A deputation from New Yory state, petitioned the government to improve the Richelieu river by deepening and otherwise. A cursory examination was made in January last.

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## RICHMOND.

Richmond is a progressive post town in Richmond county on the east bank of the St. Francis river, and a station on the Grand Trunk Railway, 77 miles south-east of Montreal. On the opposite side of the St. Francis river, is Melbourne village, which is practically a suburb of Richmond, and is connected with the latter by a fine bridge. Population about 2,200.

During the spring freshets, almost every year, the town of Richmond is flooded to a height of five or six feet, owing to ice jams formed in the river St. Francis, at a place called the 'Narrows.' In order to prevent this occurrence and the consequent floods, which has caused considerable damages in preceding years, it was decided to build four ice-breakers, three above the 'Narrows' and one above and opposite the pier of the municipal bridge. Work was commenced in February, 1903, and completed in December of the same year.

Later, it was decided to build four additional ice piers 150 feet above a dam in the St. Francis river, about 2,000 feet upstream of the bridge. The object of these ice piers was to retain the ice which runs over the dam during the winter and forms a large accumulation a few hundred feet below the said dam and contributes largely to the spring floods. The work was done in 1905.

During August and October, 1908, a sum of \$2,618.24 was expended in better securing the steel plates to ice-piers above the bridge.

## RIMOUSKI.

The town of Rimouski, in the county of the same name, is situated on the south shore of the St. Lawrence, 180 miles below Quebec, its population is about 3,500. It is an important station of the Intercolonial railway. It is also the place where the Royal mails are transferred from the steamers to the railway. Its harbour offers safe shelter for vessels of moderate draught. Spring tides rise 15 feet; neaps, 9 feet.

The widening, repairing and other works of improvement, undertaken in May, 1904, were completed during the fiscal year ended March 31, 1909. Sundry works were performed which consisted in placing the capping pieces upon the new part of the wharf, to complete the bolting of the hardwood sheathing, repairing the old sheathing and top planking, &c.

A slip, 20 feet in length and 10 feet in width, was opened through the west face, near the outer end of the wharf, to facilitate the landing of the mails.

On the west face, from the slip going shoreward, 70 fenders, 20 feet long, 10 by 10 inches, were replaced.

A length of 220 feet, on the surface of the old part of the wharf, on a width of 19 feet, was levelled and raised 8 inches; the stringers and planking being renewed. Many minor works were also performed, such as replacing mooring posts, placing ladders, &c.

A building 35 by 25 feet, neatly finished and painted, was erected on shore near the end of the wharf; it is intended to store in this, all the tools and implements of the district. A blacksmith shop, 24 by 10 feet, was also built.

After the close of navigation, the railway track was levelled and raised 5 inches for a length of 850 feet, two stringers were placed under the rails and a new planking was laid on.

The flooring of the carriage track, was doubled on a surface of 6,000 square feet, with spruce deals 3 inches thick.

The work was done by day labour and was commenced on August 18 and completed on December 15.

The expenditure amounted to \$12,863.83.

Out of this amount, the sum of \$752.52 was paid for the supply of electric light upon the wharf during last season.

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## RIVIÈRE À LA PIPE.

Rivière à la Pipe is a small village on the north shore of Lake St. John, at the mouth of the river of the same name, 7 miles north of Grande Décharge.

During the fiscal year 1908-9, the work done consisted in rebuilding the wharf for a length of 244 feet by 25 width and 3 feet in height; a sheathing was put on for a length of 80 feet and the wharf was filled with stone.

The work was started in August and was discontinued at the end of November. Expenditure, \$3,014.80.

## RIVIÈRE-AU-VASE.

Rivière-au-Vase, Chicoutimi county, on the north side of the Saguenay river, is situated in the parish of Ste. Anne de Chicoutimi, about 6 miles above Ste. Ann's village.

The work done during the fiscal year 1908-9, was the construction of a pier, 80 feet in length by 20 feet in width, which is completed.

The work was started on August 17, 1908, and was completed on November 20.

## RIVIÈRE BLONDELL.

This is a small river, tributary of the river St. Lawrence, situated in the parish of St. Joachim, in the county of Montmorency.

This river is navigable for the small sailing vessels engaged in the lumber trade at this place.

During the last fiscal year, the strengthening of the second curve of the river was completed.

The work was commenced November 3 and was completed November 18, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$656.63.

## RIVIÈRE DES VASES.

Rivière des Vases, in the county of Temiscouata, 125 miles below Quebec and 6 miles west of Isle Verte.

The sea-grass industry, which is the chief trade of the place, having grown considerably, and to provide better landing accommodation for the people living on the island opposite, in the year 1900, the construction of an open-faced cribwork pier was begun along the eastern bank of the river.

During the fiscal year ended March 31, 1909, an addition to this wharf, 75 feet in length and 8 feet high of similar work, was constructed; the total length of the wharf being now 250 feet, giving a flooring surface of about 7,500 square feet.

The work was done from September 1 to 28 of the same month.

## RIVIÈRE DU LOUP.

Rivière du Loup, or the town of Fraserville, is the chef-lieu of the county of Temiscouata. It is situated on the south shore of the St. Lawrence, 115 miles below Quebec.

It is a thriving little town of 5,000 inhabitants, which contains several manufacturing including two pulp mills. The Rivière du Loup point where the wharf is located, is distant 2 miles from the village. It is one of the best known and frequented summer resorts of the lower St. Lawrence.

There is a branch of the Intercolonial Railway from Rivière du Loup station to the outer end of the wharf, a distance of about 6 miles, and large shipments of lumber are made to the European markets.

During the fiscal year ended March 31, 1909, the following works were performed on the wharf: From the outer end going shoreward, the stringers, flooring and capping

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pieces were renewed on a length of 100 feet by a width of 30 feet. At the shore end, where the railway track is laid, the structure was renewed from top to bottom on a length of 250 feet, a width of 24 feet on a mean height of 11 feet; all the timbers were replaced and the cribwork was filled with stone instead of earth as it was formerly.

Repairs were also done to the buildings standing on the wharf. The work, which was done by day labour, was commenced on August 20 and suspended on November 28. Spring tides rise 19 feet; neaps, 12 feet.

The expenditure for the fiscal year was \$4,663.32.

## RIVIÈRE DU SUD.

Rivière du Sud, which flows through the town of Montmagny, empties into the St. Lawrence. Above the point where it is crossed by the Intercolonial Railway bridge, a protection or retaining wall was built some years ago along the east bank of the river.

The wall which is built of dry rubble masonry with cemented copings had been damaged by ice.

During the last fiscal year it was repaired; a length of 200 feet was rebuilt for more than half the height and the stone backing was replaced.

The work was done by day labour between October 15 and November 13.

Expenditure, \$428.79.

## RIVIÈRE GIRARD.

In the year 1907-8, a small wharf was built on the east side of Rivière Girard, about  $1\frac{1}{2}$  miles below Ile Verte church, the dimensions being 160 feet long, 12 feet wide on a mean height of 8 feet; the work is opened-faced, filled with stone.

During the fiscal year ended March 31, 1909, this wharf was extended a length of 60 feet, and the section built the year before, having been damaged by ice, was repaired.

The expenditure was \$999.64.

The work was commenced on August 24 and completed on October 7.

## RIVER GODEFROYE.

River Godefroye is a small river in Nicolet county, rising in the seigniory of Roquetaillade and flowing into the St. Lawrence through the parish of St. Grégoire, opposite Three Rivers.

On June 11, 1906, a contract was entered into for the construction of a landing pier at the entrance of Godefroye river, the contract price being \$4,200.

It called for the construction of :

(a) A pile headblock, 32 feet 3 inches wide, formed of two portions, one measuring 60 feet 6 inches on the outside face, another measuring 36 feet 6 inches also on the outside face, the two forming an angle of 125 degrees.

A stone approach, 611 feet long, 16 feet wide, clear at top, with slopes on both sides, said approach forming an angle of 25 degrees with the longer face of headblock; the whole structure standing 11 feet 3 inches above low water level.

Work was begun in July, 1906, and satisfactorily completed August 18 following.

In August, 1908, a sum of \$650.03 was expended in building a store-house 22 by 16 feet on a headblock and in raising stone approach from 1 to 2 feet for a length of some 200 feet. Some dredging brought the expenditure to \$8,689.28.

## RIVIÈRE OUELLE.

The pier is situated at Pointe aux Orignaux, 5 miles distant from the village of Rivière Ouelle, in the county of Kamouraska, on the south shore of the St. Lawrence, opposite Murray Bay, on the north. A branch of the Intercolonial railway, built from Rivière Ouelle station to the outer end of the wharf, connects with a

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steamer, which crosses the St. Lawrence several times a day during the summer season, calling at Murray Bay and other places on the north shore. In winter, the service is also daily.

Spring tides rise 20 feet; neaps, 12 feet.

During the fiscal year, it was decided to close the slip on the east side of the wharf. The dimensions are 200 feet long, 23 feet, greatest height, and 12 feet wide. The slip is filled with cribwork and stone ballast, to be joined on top with the old wharf.

The construction was commenced on the first of October and about three-quarters of the work had been performed when, at the end of November, it was suspended.

Expenditure, \$2,717.01.

#### RIVIÈRE PETIT CAPUCHIN.

Petit Capuchin, on the south shore of the St. Lawrence, about 30 miles below Matane, is a post village of the county of Rimouski, the occupation of the inhabitants consists chiefly in lumbering and fishing, some farming being also done.

During the fiscal year ended March 31, 1909, in order to allow the fishing boats to land safely, a considerable number of boulders were blasted and removed from the mouth of the River Petit Capuchin; the broken stone aggregating nearly 100 toises.

The work began on August 17 and was completed on September 11.

Expenditure, \$299.36.

#### RIVER RICHELIEU.

St. Johns is a delightfully situated town, chief-lieu of the district of Iberville, on the Richelieu river, 27 miles from Montreal.

St. Johns has a large trade in lumber, grain and country produce. It is connected with Iberville, on the opposite side of the Richelieu, by a fine bridge. Population, 6,410.

In order to give much needed assistance to boats passing through the swing span of the Vermont Central Railway bridge at St. Johns, a boom was constructed. It has a length of 350 feet, by a width of 4 feet, and is moored in clusters of 6 piles each, driven 15 feet into the ground every 50 feet, except the upstream cluster which has ten piles, and is protected against the ice by a steel plate, 6 feet by 6 feet and  $\frac{1}{2}$  inch thick.

During the last fiscal year, minor repairs were made to the booms at a cost of \$356.59.

#### RIVER RICHELIEU IMPROVEMENTS.

The Richelieu river runs north from Lake Champlain, through the counties of St. John and Iberville, Chambly-Verchères, Rouville, St. Hyacinthe and Richelieu and flows into the St. Lawrence at Sorel. Along the upper part, of the river from the boundary to St. Johns, a distance of 22 miles, the shores are all low lands, excepting the first two miles. These low lands are covered at high water for sometimes over two months, long enough to prevent the culture of large areas. This high water also extends over the shores of the tributaries of the Richelieu such as Rivière du Sud and Rivière au Brochet. Some 40,000 acres of land are thus rendered entirely useless, the parishes mainly affected being: St. Athanase, Ste. Anne, St. George de Clarenceville, St. Thomas, St. Johns, St. Valentin on the Richelieu; St. George de Henryville on Rivière du Sud, and St. Sébastien on Rivière au Brochet. The inundation is mainly attributable to the clearing of lands along the shores of Lake Champlain and of the Richelieu, and to natural obstructions in the latter.

In the spring, Lake Champlain rises some 7.2 feet above its summer lowest data, and the difference in level between the lake and St. Johns is only half a foot.

In order to lower the water and prevent the annual floods, it was decided to dredge a channel, 1,750 feet wide (the whole width of the river at its narrowest

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place), and 5,200 feet long, starting between Jones' and the C. V. R. bridges. This lowering of the water of course rendering necessary the construction of a movable or regulating dam so as to keep the water up during the dry season.

The exact location and nature of this dam has not been decided as yet.

During the summer of 1908, tenders were called for above dredging, but price submitted per yard being found too high, it was decided to start the work by day labour; this was commenced in October. Advantage was taken of the extreme low water by blasting all the boulders which could not be easily handled by a dredge (one cubic yard and over).

When the work in the river proper was suspended, at the beginning of December, 4,171 cubic yards of large boulders had been reduced to pieces and the government dredge *Richelieu* and tug *Ottawa* had taken out, between the C. V. R. and Jones' bridges, some 6,570 cubic yards of clay, the major part of which was dumped on the Iberville side of the river.

The rest of fiscal year was occupied in making repairs to dredge and tug and in buying material for the construction of two scows to be used next year. Total expenditure during the fiscal year was \$29,119.60, including the building of a pile driver, composed of a steel hull, steam hammer and accessory machinery, for all of which tenders had been called.

## RIVER ST. CHARLES.

The river St. Charles is a tributary of the St. Lawrence, east of the city of Quebec.

During the last fiscal year, this river was dredged, between the bridge of the Quebec and Lake St. John Railway and the Dorchester bridge, to a depth of 12 feet at the extreme low water spring tide.

This work was executed alternately by the dredges *Progress*, *Challenge* and *Ottawa*.

## RIVER ST. JAMES.

River St. James flows into the St. Lawrence, about one mile north of the village of Laprairie, or five miles south of St. Lambert.

On December 24, 1907, a contract was entered into for the construction of two ice-piers near the mouth of river St. James, in order to protect, from ice shoves, the bridge which spans the river on the road between Laprairie and St. Lambert.

The piers, located 40 feet distant, are concrete mixed 1, 3, 5 and reinforced horizontally and vertically with one inch corrugated iron bars. They are of equal dimensions, 34 feet extreme length at bottom and 22 feet at top, 10½ feet wide at bottom and six feet at top, upstream and downstream faces nosed 90 degrees with the former covered by steel plates. Height, 23 feet. Contract price, \$7,023.

Work was begun in August, 1908, and completed in the middle of November following. The expenditure, including inspector's salary, was \$6,847.50.

## RIVER ST. LOUIS (CANAL FEEDER)—NEAR VALLEYFIELD.

Valleyfield is an incorporated town, port of entry and port of call for the St. Lawrence river steamers in Beauharnois county, on the south of the St. Lawrence river at the head of the Beauharnois canal and at the foot of Lake St. Francis. Population, 10,000.

In 1894-96, the government built two small bridges over the, 4½ mile, canal feeder connecting Lake St. Francis, immediately west of Valleyfield, with river St. Louis, near village of Cartier. One of these bridges is in the parish of Ste. Cécile, about 2½ miles from Lake St. Francis, at the western extremity of road leading to 'Chemin Larocque.' The other bridge, connecting the road between St. Stanislas and St. Louis

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de Gonzague, is near the eastern extremity of feeder, some 150 feet from River St. Louis.

In December, 1908, minor urgent repairs were made to the Ste. Cécile bridge: both abutments which had receded two feet, were raised to former level and the three inch spruce flooring of bridge renewed.

#### RIVER ST. LOUIS. (NEAR ST. LOUIS DE GONZAGUE.)

St. Louis de Gonzague, a post settlement in Beauharnois county, one mile from St. Louis station, on the Ottawa and Swanton branch of the Grand Trunk Railway. Population of parish, 1,200.

During the spring high water, the River St. Louis spreads over the farming lands from the canal feeder to the village of St. Louis de Gonzague, a distance of about seven miles, and thus causes considerable damage. During the summer, the river often overflows equally after a heavy rain storm, and extensive fields of promising crops have been entirely lost.

Surveys of the river were made in November, 1903, and October, 1904. It was found that from the river of St. Louis de Gonzague to a distance of 2½ miles upstream, several little rapids give a total fall of six feet. Above the canal feeder, the fall is about one foot per mile.

By proper deepening of the river bed and straightening of certain curves, the waters should be lowered some four feet, which would be amply sufficient to protect the farmers along the banks.

To this end, a small dredge was built during the winter of 1903-04 and placed in operation in October, 1904.

Work was resumed in April 1908, and suspended November 21, until next spring. During this period, 5,433 cubic yards of solid rock were blasted and removed on a length of 450 feet and 18,250 cubic yards of clay dredged on a length of 1,825 feet.

The total expenditure during the last fiscal year amounted to \$9,050.72.

#### RIVIÈRE TROIS PISTOLES.

Trois Pistoles river empties into the St. Lawrence about 3 miles west of the village of Trois Pistoles, in the county of Temiscouata. There is a station of the Intercolonial Railway, called 'McKenzie.' A railway branch, about 6 miles long, extends from this station to a pulp mill on the river. A large saw-mill is also operating and important shipments of lumber are made to European markets.

To improve the channel, at the mouth of the river, the sum of \$999.43 was expended in removing obstructions from the entrance to the harbour; some 200 boulders were blasted, aggregating nearly 68 toises of broken stone, which were taken away. The channel was cleared upon a length of 1,800 feet by a width of 200 feet.

The work was done between August 22 and 31.

#### RIVIÈRE VAPEUR.

Rivière Vapeur, in the county of Rimouski, about 22 miles below Matane, where it empties into the St. Lawrence, forms a harbouring cove for fishing boats and vessels loading timber into ships anchored outside.

The landing in the cove was dangerous, on account of numerous boulders scattered in the entrance.

During the month of October, 1908, from the 5th to the 14th, a good many of these boulders were blasted and removed.

The expenditure was \$200.13.



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## RIVIÈRE VERTE.

Rivière Verte, which flows through the parish of Isle Verte, in the county of Temiscouata, empties into the St. Lawrence, about  $\frac{3}{4}$  of a mile west of the Isle Verte church. During spring freshets, this river is liable to cause considerable damage by flooding the mills, scouring and disintegrating the land of the riparian properties.

In order to prevent further damage, or, at least, to reduce it to the lowest possible amount, it was decided to improve the channel of the river.

These necessary works were performed during the years 1904, 1905 and 1906.

During the fiscal year ended March 31, 1909, the dyke, built on the east side of the river, having been damaged by an ice shove and water undermining, was repaired; piles were driven along the east face of the dyke, on a length of 200 feet; the depth sunk into the clay, varying from 5 to 8 feet; the piles were well secured to the face timbers; the top of the dyke was raised and levelled by the addition of two courses of face-timbers and cross-ties. In front, bundles of fascines were spread upon the bottom of the river, and about 80 toises of stone have been placed on top. To facilitate the flow of water, the channel of the river was deepened in the vicinity of the dyke. The work was done by day labour, commencing on August 21, and terminating on the 24th.

To facilitate the landing of boats for people engaged in the sea-grass industry and to help that trade, which is growing every day, a small wharf was constructed along the western bank of Rivière Verte. It is 254 feet in length, 8 feet mean height, and has a width at flooring of 18 feet.

It is an open-faced light cribwork, filled with stone. To guard against undermining and scouring, the construction was seated upon a fascine foundation.

The work began on August 21, and was completed on October 24.

Total expenditure, \$2,189.34.

## ROBERVAL.

The town of Roberval, in the county of Chicoutimi, is built on the east side of the River Ouitchouanish, near its mouth, on the south shore of Lake St. John, and 200 miles east of Quebec. It is the northern terminus of the Roberval branch of the Quebec and Lake St. John Railway.

In 1899, the wharf was destroyed by fire and was rebuilt, in 1900-01, for a length of 500 feet, a width of 30 feet and a height of 23 feet; a waiting room, 15 by 18 feet, and a freight shed, 15 by 28 feet, were erected on the wharf.

Amount expended, \$9,747.82.

During the year 1902-3, the wharf was enlarged on the south side for a length of 60 feet by 15 feet in height; a trestle work was built, of spruce timber, with four stringers of 12 by 12, ready to receive the sleepers.

Amount expended, \$4,581.59.

During the year 1903-4, the greater portion of the trestle work, done the previous year, was planked with 3-inch plank, stringers were laid, resting on a cap-piece of 12 by 12. The stringers are 10 by 10 inches and covered with 3-inch deals.

Amount expended was \$625.55.

During the year 1905-6, the planking of the trestle work, commenced in 1903-4, was completed.

Amount expended, \$1,002.81.

During the year 1906-7, the planking and the sheathing of the wharf was repaired.

Amount expended, \$16.88.

During the year 1907-8, the work done was the renewing of the planking of the wharf, and general repairs were done to the slip.

Amount expended during the year, \$1,000.91.

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The work done during the fiscal year 1908-9, was the completion of the approach, and the renewing a part of the flooring. Amount expended, \$924.58. Work was started on September 22, and completed on October 13, 1908.

## RUISSEAU À SEM.

In the county of Rimouski, about 18 miles below Matane, is Ruisseau à Sem, which forms at its meeting with the St. Lawrence a cove used as a harbour by fishermen and lumber merchants. Large saw-mills are in operation in the vicinity of Ruisseau à Sem. The entrance to the cove was crowded with boulders rendering navigation very dangerous. During the month of October, 1908, a number of these boulders were blasted, broken and taken away.

Total expenditure, \$200.

## RUISSEAU LEBLANC.

Ruisseau LeBlanc is a small village on the north shore of the Baie des Chaleurs, in the county of Bonaventure. The village is built near the mouth of the river also called Ruisseau LeBlanc.

In order to protect the entrance to the river and afford shelter to fishing boats, on March 20, 1902, a contract was entered into for the construction of a breakwater, 500 feet long and 20 feet wide. The work was completed in the same year at a cost of \$21,077.29.

During the fiscal year 1904-5, the sum of \$300 was expended in repairs.

During the last fiscal year ending March 31, 1909, the stone approach which was partly washed out had been replaced by a good strong round timber construction, 125 feet long, 10 feet wide and 14 feet high, well ballasted with good sized stone.

The construction was carried out by day labour, at a cost of \$1,541.40, was commenced on September 14 and completed on October 10.

## ST. ALEXIS DE GRANDE BAIE.

St. Alexis de Grande Baie is situated on the south shore of Ha Ha Bay, River Saguenay, about 63 miles from its mouth.

The wharf at this place is 1,565 feet in length by 25 feet in width; 580 feet are built in cribwork, the balance is of blocks and spans. There are 14 piers, 20 by 25 feet, one 25 by 25 feet, five 30 by 25 and the outer one, 50 by 25 feet. The piers are built of round log open-faced cribwork, with fenders, 8 by 10 inches and sheathed with 4-inch planks. The superstructure is built on corbels and stringers, 12 by 13 inches, with a planking of 3-inch spruce.

The total height of the outer pier is  $31\frac{1}{2}$  feet, with  $9\frac{1}{2}$  feet of water at low water spring tide.

During the fiscal year 1908-9, minor repairs were made to the wharf and a certain quantity of timber was bought in view of the construction of a new crib.

Amount expended during last fiscal year, \$2,633.58.

## ST. ALPHONSE DE BAGOTVILLE.

St. Alphonse de Bagotville is situated at the head of Ha Ha Bay, on the southern side of the River Saguenay, 66 miles from its mouth. The work done during the fiscal year was the construction of a pier 60 feet wide at the west end, 44 feet 6 inches at the east end, and 160 feet in length, with a total height of 39 feet. This pier was sunk in January and was partly filled with stone. The work was done under contract.

Repairs were also made by day labour on one corner of the wharf.

Total expenditure during the fiscal year ending March 31, 1909, amounted to \$18,540.89.

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## STE. ANGÈLE DE LAVAL (DOUCET'S LANDING).

Ste. Angèle de Laval is a post village and parish in Nicolet county, on the St. Lawrence river, opposite Three Rivers and near to Doucet's Landing on the Three Rivers branch of the Grand Trunk Railway to Victoriaville and Arthabaska. Population of parish 982.

On February 8, 1907, a contract was entered into for the construction of :

A pile headblock, 85½ feet long and 64 feet 3 inches wide, standing 23 feet 3 inches high in 12 feet of water at lowest level; a pile approach, 72½ feet long and 20 feet wide for the first 60 feet from stone approach, widening to 37 feet at intersection with headblock; a stone approach, 226½ feet long and 20 feet wide at top, with slopes of one in one on both sides. Contract price, \$4,911.75.

A right of way 30 feet wide and about 460 feet long, leading from public road to shore was bought for \$400.

The contract was completed December 30, 1908, with an expenditure for the last fiscal year of \$1,856.55.

## STE. ANNE DE LA PÉRADE.

Ste. Anne de la Pérade is a post village in Champ'lain county, on the Canadian Pacific Railway, 6 miles from Batiscan and 53 miles above Quebec. The River Ste. Anne, one of the tributaries of the St. Lawrence, runs through the village.

During the winter of 1908-9 (from December 26, 1908, to January 26, 1909) the dykes, built in 1895 to protect the sand banks of the village, were repaired by day labour and 162 toises of stone ballast were placed at the most needed places.

The expenditure during the fiscal year has been \$1,693.46.

## STE. ANNE DES MONTS.

The Ste. Anne river flows into the St. Lawrence at the west end of the village of Ste. Anne des Monts, one of the oldest and most important settlements of the Gaspé Peninsula, some 100 miles below the nearest railway station, Little Métis. Several saw mills are in operation.

In the fiscal year 1904-5, timber was bought, to the amount of \$570.86, towards improvements at the mouth of the river.

During the month of June, 1906, more materials were bought and work performed towards preparation for said improvements.

The outside crib, 50 by 22 feet at top, with a batter of one in eight was built up to coping into five feet of water at low tide.

During the fiscal year 1907-8, 400 feet of the training pier was built and a crib of 40 feet sunk into the channel and built up to two feet above low water level.

During the last fiscal year, the shore end of the jetty was connected with the outside part by mattresses and cribwork. Two hundred and fifty feet of superstructure will have to be completed next year and a gap of 50 feet, left without mattresses, filled. A new channel, 100 feet wide, was opened along the eastern side of work.

Total expenditure, including dredging, \$4,992.94.

## STE. ANNE DE SOREL.

Ste. Anne de Sorel, in the county of Richelieu, is situated at the head of Lake St. Pier on the south shore of the St. Lawrence, 2 miles below the town of Sorel.

In 1890, the necessary materials costing \$2,497.11, for the construction of an ice-breaker 60 by 25 feet at bottom and 56 by 24 feet at top and standing 12 feet high in 7 feet of water, were bought. The structure was completed the year following at a cost of \$1,696.25. It is situated opposite the parish church.

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At the beginning of October, 1898, the above pier was connected with shore by a crib 100 feet long, 18 feet wide at bottom and 14 feet wide at top with icebreaker all along, its height varying from seven to two feet.

Extensive repairs were begun in September, 1908, and completed at the end of October. The icebreaker of headblock was enlarged with stem six feet, so as to reduce the slope; the upstream side of wharf was covered with a one foot layer of concrete over icebreaker; the whole flooring was renewed in six inch concrete and the cap piece changed. Expenditure, \$1,256.14.

## STE. ANNE DU SAGUENAY.

Ste. Anne du Saguenay, Chicoutimi county, is situated on the north shore of the Saguenay river, 72 miles above Tadoussac, opposite the town of Chicoutimi.

The work done during the fiscal year 1908-9, was the construction of a pier, 36 by 26 feet and 30 feet deep, which is a continuation of the present wharf; the west side of the whole wharf has been raised four feet, and a sheathing was put on the work.

Work was started on August 17 and completed on November 13.

Amount expended, \$3,999.75.

## ST. CHARLES.

St. Charles is a post village in St. Hyacinthe county, on the River Richelieu, 9 miles from St. Hilaire station. Population of parish, 1,500.

In 1907, the government bought for \$300, the old crib wharf, 145 by 25 feet, extending upstream from Union street, opposite the saw mill and right of way, 75 by 23 feet, to Alma street included in purchase.

In September, 1907, work was begun on a new pile structure, built immediately in front of the old one, of the same length at top and 24 feet wide, lapping some four feet on the crib. It stands 18 feet high in eight feet of water at low level. The old wharf was brought, with stone and earth, to the level of the new structure.

The structure was finally completed at the end of November, 1908, and a freight shed, 15 by 20 feet was erected at south-eastern corner of headblock, at an expenditure of \$2,169.29.

## ST. CHARLES BORROMÉE.

St. Charles Borromée is a village situated on the north shore of La Grande Décharge of Lake St. John, in the county of Chicoutimi, 21 miles above Chicoutimi town.

Two landing piers one on each side of the river, 100 feet in length by 40 feet width, were commenced in 1906, in round timber open-face cribwork and fully ballasted with stone.

The work done during the fiscal year 1908-9, was the continuation of the construction of the two landing piers; both are fully ballasted, and the north one is now completed.

Expenditure, \$1,034.56.

## ST. CHARLES DE CAPLAN.

St. Charles de Caplan, situated on the north shore of the Baie-des-Chaleurs, is one of the most important business centres of the county of Bonaventure.

During the last fiscal year, 1908-9, the approach to wharf, which was in a dilapidated and dangerous condition, was repaired and a protection crib-work, 130 feet long, 12 feet high and 12 feet wide, was constructed and placed alongside the approach; it is a round timber construction well ballasted with stone.

The work was performed by day labour at the cost of \$787.79.

The construction was begun on October 14, and was completed on November 7.

At the last session of parliament, the sum of \$5,000 was voted towards the construction of an addition to the present wharf, which was built in 1904-5. The con-

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struction of that wharf at St. Charles de Caplan was the beginning of its present state of prosperity.

During the fiscal year ending March 31, the sum of \$5,008.72 was expended to purchase timber.

## STE. CROIX

Ste. Croix is a post village and parish in Lotbinière county, on the Intercolonial Railway, 29 miles southwest of Lévis.

At the last session of parliament, the sum of \$5,000 was voted for the construction of a wharf.

Work was started on October 1 and suspended on November 19; it consisted in building with stone, gravel and sand, an approach, 150 feet in length, 20 feet in width and extending from high water line inshore, and in constructing a crib, 100 feet in length, 20 feet in width on top, six feet high at south end and nine feet at north end, and fully ballasted.

Amount of expenditure, \$2,908.37.

The approach proper is an abutment 150 feet in length by 20 feet in width, extending from high water line inshore; it is built of large stone in foundation, levelled with layers of smaller sized broken stone, the whole covered and finished with earth, gravel and sand, well rammed, with, in addition, side crossings 15 feet wide, to allow circulation over the beach; depth of embankment at south end, 12 inches, increasing to 2, 3, 4, 5 and 6 feet, with three feet at north end or high water line where an open face crib of 100 feet in length, 20 feet in width on top, 6 feet high at south end and 9 feet at north end, starts; the structure is built of cedar with three-inch spruce deal sheathing on three faces, and fully ballasted. Cubic contents of embankment, 385 yards; of crib, 570 yards. The batter is one in ten feet; a small shed was also built for shelter, no other accommodation being any where near.

## ST. EDOUARD DES MECHINS.

The village of St. Edouard des Mechins, in the county of Rimouski, is situated on the south shore of the St. Lawrence, about 25 miles below Matane. It has a population of 600, consisting chiefly of fishermen and lumbermen. Some farming is also done.

To provide more facilities of landing for the inhabitants of this part of the St. Lawrence coast, also to supply the total want of shelter for their craft, the department decided to build a wharf.

On October 30, 1906, a contract was entered into for the construction of the proposed work; the contract price being \$26,900. The construction was commenced in May, 1907, and the final estimate was forwarded on October 25, 1908. Nearly two-thirds of the work had been built during the last fiscal year. The new wharf consists of a stone approach, 20 feet long, and a crib-work, 585 feet in length, having a width of 20 feet for a distance of 260 feet and 30 feet for the remainder; the outer or north-west face being sheathed with red birch, 10 inches thick. The crib-work is close-faced with a batter of one in twelve on both sides and outer end.

The depth of water available at the outer end, at low water spring tides, is 17½ feet.

Spring tides rise 13 feet; neaps, 8 feet.

The road leading from the highway to the wharf, which was built last year, was fenced during the last fiscal year at a cost of \$25.

## ST. ELOI.

St. Eloi, in the county of Temiscouata, lies on the south shore of the St. Lawrence, 17 miles below Rivière du Loup.

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During the fiscal year ended March 31, 1909, to help trade by giving better facilities of landing to people engaged in the sea-grass industry, the construction of a small wharf was commenced on the south side of Rivière à la Loupe.

A length of 75 feet, 24 feet wide, by a height of 8 feet, was built. It is open-faced cribwork, filled with stone.

The work was commenced on September 17, and was suspended on October 29.

Expenditure, \$1,009.84.

#### STE. EMILIE.

Ste. Emilie is a village in the county of Lotbinière, the post office name is Leclercville. It is situated on the south shore of the St. Lawrence and at the mouth of 'La Grand Rivière du Chêne,' 50 miles above Quebec.

The work done, by day labour, during the last fiscal year consisted in renewing a portion of the trestle-timbers, either lost or damaged in the heavy storm of November, 1907, and in rebuilding one of the sheds on the wharf.

The balance of the expenditure was incurred in clearing off the ice from the blocks, after spring freshets, and in replacing the trestle approach, which is usually removed at close of navigation.

Total expenditure during the fiscal year ended March 31, 1909, \$324.20.

#### STE-FAMILLE I.O.

Ste. Famille is situated on the north shore of the Island of Orleans, in the county of Montmorency, 18 miles below Quebec.

During the present fiscal year minor repairs were made to the flooring of the wharf from October 5 to 8, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$88.16.

#### ST. FRANÇOIS, I.O.

St. François is situated at the eastern end of the Island of Orleans, in the county of Montmorency, 25 miles below Quebec.

On February 11, 1908, a contract was entered into for the completion of the approach to isolated pier for the sum of \$16,038.

This work consists in (a) one solid close-faced, stone-filled timber crib of a total length of 200 feet and a width of 30 feet. This construction is built close to the completed part of the approach and well secured to the rock inshore.

(b) A stone embankment, 130 feet in length, by a width of 30 feet at the top, having both sides in riprapped stones and sloped one in one. The top of this stone embankment is formed of an 8-inch layer of macadam stones, covered with a 4-inch layer of gravel and sand. These layers are properly laid and hardened with a 2,000-pound roller. The sides of embankment are large hand-laid stones being at least 30 inches in length and 18 inches wide and deep, embedded alternately endwise and side-wise and perpendicular to the slope;

(c) The top of the rock forming part of the approach was levelled by blasting to the proper height.

During the present fiscal year the work detailed in this contract was completed.

#### ST. FRANÇOIS DU LAC.

St. François du Lac, chef-lieu of Yamaska county, is on the southern side of the River St. Francis, opposite the village of Pierreville, about 7 miles above the entrance of the river into the St. Lawrence, 28 miles southeast of Sorel.

Population of the parish, 2,639.

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Work on the construction of a landing pier was commenced on August 31, 1908, and was discontinued on December 3 for the winter. The work was resumed on March 24 and at the end of the fiscal year the work was under progress.

The construction consists :

Of a pile wharf 140 feet long, 30 feet wide and nine feet in height above low water ;

Of an ice-breaker, built of close-faced cribwork, measuring 30 feet by 25 feet in width, 8 feet in height under water and 16 feet in height above low water mark ;

On an earth and stone approach, with drainage, about 800 feet long and 39 feet wide.

The expenditure during the fiscal year ending March 31, 1909, was \$10,999.72.

## ST. FULGENCE.

St. Fulgence, otherwise called 'L'Anso aux Foins,' is a village in Chicoutimi county, 10 miles below the town of Chicoutimi.

The work during the fiscal year 1908-9, consisted in the completion of the pier commenced in the previous year; this is 35 feet in length, 30 feet in width, with a height of 13 feet, sheathed and fully ballasted.

The work commenced on August 1, was completed October 31, 1908.

Amount expended during the year, \$1,666.97.

## ST. GEDEON ISLANDS.

St. Gedeon islands, in the parish of St. Gedeon, are situated on the southeast shore of Lake St. John, 39 miles west of Roberval. Population about 1,200.

The work done during the fiscal year 1908-9 consisted in repairing both corners of the wharf and raising the slips. The work was started in September and was completed in October.

Expenditure, \$1,030.51.

In March, boulders were removed around the wharf at a cost of \$393.27.

## ST. GODEFROY.

St. Godefroy, in the county of Bonaventure, is a flourishing parish, having a population of 2,500 inhabitants, partly engaged in the fishing industry. There is also a considerable lumber trade done at this place.

The wharf, built in 1904-5, which was badly damaged during the big storm of November, 1906, has been repaired during the last fiscal year. The construction, upon a distance of 400 feet, was raised and levelled up to its normal height; six hundred yards of ballast were put in; the sheathing on the east side partly renewed, and the cap pieces on the whole length of the wharf have also been renewed.

These repairs were executed by day labour at a cost of \$1,393.78; commenced on August 19 and completed on October 10.

## ST. HILAIRE.

St. Hilaire, a post village in Rouville county, 1 mile from St. Hilaire Station, on the Grand Trunk railway, 22 miles east of Montreal. Population, 1,300.

On February 19, 1909, an order in council was passed authorizing the purchase of a shore wharf with adjoining plot of land, opposite the parish church, for the sum of \$1,200. This wharf built in about 1860, was open-faced crib-filled with stone, 62 feet long outside face, standing 14 feet high in 7 feet of water at lowest level. At the time of the transfer, the wharf was in a very dilapidated condition; the stone contained therein alone being considered of any value, together with the plot of land.

Its construction was begun immediately. The side face-timber were raised to low water level. In front of the wharf, a close-faced crib, 60 feet long and 8 feet

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wide was sunk and fully ballasted with stone at each end, and return wings, 23 feet long and 8 feet wide were built from low water level over the old structure.

The top of the flooring of the new crib was made to stand 10 feet above low water level; the old wharf being brought to same level with stone. On March 31, the work was completed, minus the addition of some 30 cubic yards of stone, gravel and sand, and the construction of a freight shed. The expenditure during the last fiscal year was \$4,153.78.

## ST. IGNACE DE LOYOLA SOUTH.

St. Ignace de Loyola is a post village and parish in Berthier county, on an island in St. Lawrence river, close to the western end of Lake St. Peter, and  $2\frac{1}{2}$  miles from Berthierville station on the Canadian Pacific railway and from Sorel, on the opposite bank of the St. Lawrence in Richelieu county. Population of parish 875.

St. Ignace de Loyola South is on the St. Lawrence immediately opposite Sorel,  $1\frac{1}{2}$  miles south of the parish church of St. Ignace, near which the government has another small wharf.

On November 18, 1907, the Crown entered into a contract for the construction of:

A pile headblock, 60 feet long and 40 feet 4 inches wide at top, with icebreaker inclined  $1\frac{1}{2}$  in 1; a pile approach 144 feet long and 20 feet wide at top, also with icebreaker  $1\frac{1}{2}$  in 1; a stone embankment, 84 feet long and 20 feet wide at top, with both sides riprapped and sloped  $1\frac{1}{2}$  in 1 and 1 in 1, upstream and downstream respectively; outside face standing 22 feet high in 10 feet of water at lowest level. Contract price, \$10,800.

Work was commenced in February, 1908, and at the end of March following, the structure was about 80 per cent completed.

The structure was completed at the beginning of October last. An extra of \$1,500 was allowed contractor for sheathing, down to one foot into the ground, the outside face of the headblock with 8-inch spruce, and the downstream side and inner return of headblock and downstream side of approach, with 4-inch spruce.

The expenditure during the last fiscal year amounted to \$5,094.91.

## ST. JEAN, I.O.

St. Jean is situated on the south side of the Island of Orleans, in the county of Montmorency, 18 miles below Quebec.

During the last fiscal year, a new freight-shed and waiting-room was constructed on the wharf, surmounted by a lantern tower.

The work was commenced on November 2, and abandoned on December 31, 1908.

On March 5, this work was resumed and completed on March 18, 1909.

The movable slip was also furnished with two winches and necessary appliances for the working of the said slip.

The expenditure for the fiscal year 1908-9 amounts to \$2,394.34.

## ST. JEAN DES CHAILLONS.

St. Jean des Chaillons, a post village and parish in Lothinière county, is situated on the River St. Lawrence, 57 miles above Quebec. Population of village, about 1,000.

During the last fiscal year, the following works were executed by day labour, at the government wharf:—

A length of 160 feet of open face cribwork, 20 to 35 feet wide, and averaging 6 feet high, was constructed as a continuation of the side wharf built in 1906.

The retaining wall, commenced in 1907, for the protection of the side wharf, was extended a further length of 99 feet.

In order to overcome a steep perpendicular elevation of the hill and to start the ascent towards the public highway, a crib of open-face cribwork was erected on



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the east end of the side wharf; its dimensions are, at base, 29 by 33 feet, rising up to 29 feet above side wharf, with batter  $2\frac{1}{2}$  in one on sides, making a 24 by 24-foot platform on top, and extending backwards on the cliff; a trestle approach, 76 feet long, 24 feet wide on platform and 44 feet wide at upper end, connects the crib with the road.

The whole seaward elevation of the side wharfs, the protection walls, the front and sides of the two end cribs are protected with a 3-inch sheathing of tamarack with white spruce and hemlock deals, to a depth of 12 feet.

Four movable upright fenders were placed on the outer end of wharf.

Work commenced on May 11 and lasted up to November 30.

Total expenditure for the last fiscal year, \$6,140.27, and dredging \$2,835.28.

## ST. JÉRÔME.

St. Jérôme is a village situated on the southeast shore of Lake St. John, 24 miles east of Roberval; besides the church, post office, telegraph and railway station, the parish contains several stores, three cheese factories, and two saw-mills.

During the fiscal year 1908-9, the work done consisted in replacing two piers, that were removed from their original position, and in building two small piers. The pier which was sunk in March, 1907-8, was partly demolished by the flood, and a diver worked for two weeks to take the stone off that pier.

The old wharf was strengthened by adding vertical posts and a sheathing. The approach of the wharf was raised four feet, on a length of 140 feet from shore.

Work was commenced in August and completed in November.

Expenditure, \$4,004.26

## ST. JOSEPH DE LETELLIER.

St. Joseph de Letellier, in the Bay of Seven Islands, north shore of River St. Lawrence, is situated in the county of Saguenay, 200 miles below Tadoussac.

The work during the fiscal year 1908-9, was the construction of a crib, 40 by 30 feet, with an average height of 14 feet; there is about 20 toise of stone in the crib; it was impossible to sink the crib last fall on account of the season being too late.

Work was started on September 8, and suspended on October 23.

## ST. LAURENT, I.O.

St. Laurent is situated on the south side of the island of Orleans, in the county of Montmorency, 10 miles below Quebec.

During the last fiscal year, the widening of the approach to the head-block which was commenced during the fiscal year 1907-8, was completed.

This work consists in a solid close-faced stone filled timber crib, of a total length of 600 feet by an average width of 14 feet, having its sides vertical. The new work was well fastened to the old work.

The two-thirds of this construction were built during the fiscal year 1907-8 and the remainder was completed during the last fiscal year.

The work was commenced on August 17, and completed November 24, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$7,109.83.

## ST. MICHEL.

St. Michel, in the county of Bellechasse, lies on the south shore of the River St. Lawrence, 15 miles below Quebec.

The site of the village is picturesque and the place is frequented as a summer resort. The coasting steamer *Champion* calls twice a day, giving good facilities for the shipment of farm produce.

Spring tides rise 21 feet; neaps, 13 feet.

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The public wharf at St. Michel is 1,100 feet long, 30 feet wide, with a headblock 50 by 40 feet.

During the fiscal year 1908-9, to provide better facilities of landing, a slip was constructed on the west side of the outer end of the wharf; the dimensions are 54 feet long, 11 feet wide, inclined 1 in 5 on the height of the wharf; it is close-faced cribwork filled with stone, two mooring posts and two elm fenders were placed on the slip.

The flooring of the wharf was renewed upon a surface of 1,872 square feet, with 3-inch thick spruce deals.

The west side of the freight shed, damaged by ice, was sheathed with 1½-inch boards, and the whole building and the mooring posts were painted.

The works were commenced on August 1 and completed on September 21.

The expenditure during the fiscal year was \$1,842.44.

#### ST. MICHEL D'YAMASKA.

St. Michel d'Yamaska is a post village in Yamaska county, on the Quebec, Montreal and Southern Railway, 10 miles from Sorel, about 3 miles above the lock on the Yamaska river. This river, one of the tributaries of the St. Lawrence, runs through the village. Population, 1,575.

It has been decided to build a public wharf at the centre of the village, on the western side of the river. A piece of land, from the public road to the river, was purchased from Dr. Bergeron, of St. Michel d'Yamaska, being part of lots Nos. 36, 41 and 42 of the cadastral plan of the parish, for the sum of \$500.

The landing pier consists of a close-faced cribwork, measuring 108 feet long, 30 feet wide and 12 feet in height, in four feet of water, with an ice-breaker at the upper end, measuring 34 feet by 30 feet by 4 feet.

The work commenced September 29, was discontinued December 3, 1908, for the winter. The work was resumed on March 26, and, at the end of the fiscal year it was under progress.

The expenditure during the fiscal year ending March 31, 1909, was \$5,432.60.

#### ST. NICHOLAS.

St. Nicholas is a prosperous village on the north shore of the St. Lawrence, 14 miles above Quebec, in the county of Lévis.

Spring tides rise 19 feet; neaps, 12 feet.

During the fiscal year ended March 31, 1909, the sum of \$123.39 was expended on the wharf at this place, in effecting temporary repairs to the flooring, on which were nailed down 290 spruce deals: work, which was done by day labour, was commenced on the 6th and completed on October 8.

#### ST. OMER.

St. Omer, a prosperous parish on the north shore of the Baie-des-Chaleurs, county of Bonaventure, some 42 miles from Metapedia.

A steamboat plies semi-weekly between St. Omer and Dalhousie.

On January 29, 1908, a contract was entered into for the construction of a wharf at that place. Contract price, \$12,400.

The construction, which consists of a cribwork abutment, 24 feet by 22 feet; 13 cribwork blocks, 20 by 22 feet, and an outer block, 30 by 26 feet, placed at intervals of 20 feet and spanned over with stringers; making a total length of 600 feet.

Construction was begun on May 1, and completed on August 29.

An additional sum of \$173.56 was expended to build an approach, to paint the mooring posts, tops of fenders and cap pieces; a crane and tackle were also placed at the outer end of the wharf.

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## ST. PAUL DE JOLIETTE OR D'INDUSTRIE.

St. Paul d'Industrie is a post village in Joliette county, on l'Assomption river, and a station called Crabtree's Mills on the Canadian Northern Quebec Railway, 5 miles from Joliette.

On January 10, 1908, the Crown entered into a contract for the construction of an ice-breaker in River l'Assomption, near the site of Malo bridge, some 4 miles south-east of the village of St. Paul. This ice-breaker is to be formed of :

A pile substructure, composed of 41 spruce or pine piles driven 18 to 20 feet at intervals of from 3 to 4 feet up to the level of the bottom of the river; a concrete superstructure 40 feet 10 inches long, 11 feet 7 inches wide at bottom, 18 feet long and 6 feet wide at top, with upstream face-nosed 90 degrees, covered with  $\frac{1}{4}$  inch 3 by 25 feet steel plate, and inclined one in one from one foot above ordinary low water.

Construction work was begun March, 1908 and suspended the 25th of the same month when all the piles had been driven.

Work was resumed in August, 1908, and the pier completed in the middle of October. An extra of \$150 was allowed contractor for some additional rip-rap, 10 toise, which were ordered and placed around the concrete base. Total expenditure during year was \$4,240.70.

## ST. PAUL DE L'ILE AUX NOIX.

St. Paul de l'Île aux Noix, formerly St. Valentin, is on the west shore of the Richelieu river, in St. Johns county, near the southern boundary, some 4 miles north of Lacolle or 12 miles south of St. Johns. Population about 600.

As this place had no wharf communication the large quantity of hay which is annually exported to the United States ports of Lake Champlain, and the farm produce shipped to St. Johns having to be conveyed in scows to barges anchored in the river channel, thereby causing double handling and correspondent expenses, a sum of \$5,500 was appropriated in 1897 towards the construction of a landing pier at the foot of the government road leading from the King's highway to the Île aux Noix ferry.

On March 17, 1897, a contract was entered into for the construction of :

A stone and earth embankment, 135 feet long, 25 feet wide, with sides and outer end sloped one in one; a trestle approach, 156 feet long and 20 feet wide; a crib-work headblock, 60 feet long and 35 feet wide, with outer face standing  $19\frac{1}{2}$  feet high into  $9\frac{1}{2}$  feet of water at low level.

The construction was started immediately and the structure completed in 1898 at a total cost of \$6,152.43.

In September, 1908, extensive repairs were begun, the four corners and part of outer face of headblock were resheathed with 8-inch oak and  $\frac{1}{4}$ -inch steel plates, some floor planks renewed, the store-house painted and its supports strengthened, the derrick painted and some 500 feet of roadway, from King's highway to wharf, macadamized; work was completed at the end of November at a cost of \$1,168.53.

## ST. PIERRE LES BECQUETS.

St. Pierre les Becquets is a post village and parish in Nicolet county, on the St. Lawrence, 4 miles from and opposite Batiscan, on the Canadian Pacific Railway, and 19 miles east of Three Rivers.

Work on the contract, entered into in May, 1908, for the construction of a landing pier at St. Pierre les Becquets, was begun in July and completed September 8 following. Contract price, \$7,456.75.

The structure, built at the foot of the hill leading to the river, consists of : a pile headblock, 84 feet long and 40 feet wide at top, with an ice-breaker inclined one and a half in one; a pile approach, 60 feet long and 20 feet wide, with ice-breaker all

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along; a stone embankment, 85 feet long and 20 feet wide, with both sides riprapped and sloped one and a half in one.

An extra of \$1,400 was allowed the contractor for sheathing outside face of wharf with 8-inch spruce driven one foot into the ground, and the whole downstream side, and inner face of headblock and downstream side of pile approach with 4-inch spruce.

Contract called for the building of this wharf after the long 10 foot channel leading to it should have been dredged. As this dredging could not be completed this year, the wharf was built just the same, the whole outside piles being driven into some 25 to 27 feet of ground instead of 15 feet, as specified in contract. An extra allowance of \$241.60 was given contractor on this account, making total expenditure, \$22,008.10, including dredging.

## ST. SIMÉON.

St. Siméon, is situated on the north shore of the river St. Lawrence, in the county of Charlevoix, 107 miles below Quebec.

On December 18, 1907, a contract was entered into for the construction of a headblock to the existing wharf, for the bulk sum of \$16,900.

This work consists in a solid close-faced and stone-filled timber crib of a total length of 100 feet and a width of 40 feet. This headblock is built close to the old wharf; the sides are built vertical. On the centre of the block, at the head, was left a space, 10 feet wide by 50 feet long, to place a movable slip. On each side of the slip were built two chambers for floating pontoons.

This work was commenced and completed during the last summer season.

Total amount expended, \$17,772.75.

## ST. SULPICE.

St. Sulpice is a post village in l'Assomption county, on the north shore of the St. Lawrence, 24 miles below Montreal, 5 miles from l'Assomption on the line of the Canadian Northern Quebec Railway. Population of parish, 650.

During 1906-7, the private wharf, with adjoining plot of land, the property of the Richelieu and Ontario Navigation Company, situated at the foot of the road leading to l'Assomption, and  $1\frac{1}{2}$  miles above the village of St. Sulpice, was bought by the Crown for the sum of \$2,300. The property was composed of: a crib headblock,  $65\frac{1}{2}$  feet long at bottom, 56 feet at top on account of icebreaker, and 31 feet wide, outside face standing 19 feet high in 8 feet of water at low level; a crib approach, 150 feet long and 20 feet wide; a plot of land, adjoining wharf and extending to public road, of irregular shape and forming an area of 4,575 square feet.

In August, 1908, the old structure was razed down to 3 feet above low water level, a close-faced crib, 30 feet long outside face and 40 feet wide, was sunk along downstream side of the old headblock, an icebreaker was built the whole length of upstream side of wharf, and the approach widened on downstream side by the addition of a close-faced crib, 14 feet wide. The whole structure was brought to 12 feet above low water level and ballasted with stone; some more stone filling and the flooring remain to be done.

The total amount expended during the fiscal year 1908-9 was \$5,502.58.

## ST. ZOTIQUE.

St. Zotique is a post village in Soulanges county, on the north shore of the St. Lawrence,  $2\frac{1}{2}$  miles above Côteau Landing. Population, 950. The mooring pier at Côteau Landing having been found to be too near the head of the Côteau rapids, for the safety of rafts and steamers requiring to tie up, a mooring pier was begun at St. Zotique in 1881-2, and completed in 1884. It consisted of a close-faced crib headblock,

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100 feet long, 24 feet wide, sunk in 9 feet of water, and of a 12-foot approach composed of 34 close-faced cribs measuring 8 by 12 feet, placed at intervals of 23 to 28 feet and spanned, 12 by 12 stringers supporting flooring, making total length of pier 1,150 feet.

In October, 1908, permanent repairs to approach were begun. The whole 34 timber cribs were razed to one foot above lowest level; another pier was added adjoining inner side of headblock and a concrete superstructure, from lowest water level to 4 feet above, built on the loose stone. These concrete blocks are all  $10\frac{1}{2}$  by  $4\frac{1}{2}$  feet at top, except for the two larger piers, where they are 22 by  $4\frac{1}{2}$  feet with all sides battered one in twelve. Upon these were placed the steel spans composed of four 15-inch I-beams, 3 feet 3 inches distant, centre to centre (except the three spans between and immediately adjoining larger piers, where there are seven beams from 3 feet 3 inches to 3 feet 10 inches distant, centre to centre), resting on  $\frac{1}{2}$ -inch bed plates and connected with  $\frac{1}{2}$ -inch rods and 1-inch pipe separators. These steel beams support 5 by 7 inch cedar stringers and 3-inch pine flooring.

The work was suspended on March 31, 1909, when the expenditure for the fiscal year amounted to \$9,084.74.

## SABREVOIS.

Sabrevois is a post village in Iberville county, on the Richelieu river, 7 miles south of Iberville. Population, 700.

In order to better accommodate the traffic by waterway to and from this place, an old wharf, together with a 30-foot right of way from the public road to the river, a distance of 1,372 feet, was purchased in 1899 for the sum of \$500. A new structure was immediately begun in February, 1900, by day labour, and completed in November following at a cost of \$6,573.70. The wharf consists of:

A stone embankment, 200 feet long and 20 feet wide, with slopes of one in one on both sides; a trestle approach, 120 feet long and 24 feet wide; a pile headblock, 108 feet long and 30 feet wide, with a cribwork icebreaker at upstream end.

During September, 1908, extensive repairs were begun; the whole 8-inch sheathing of icebreaker, some of the concrete, stringers and binders of headblock and trestle approach, and about half of the fenders and pine flooring were renewed; the store-house was also painted and the stone approach and right of way improved.

## SAULT AU MOUTON.

Sault au Mouton is situated on the north shore of the St. Lawrence, 3 miles from Mille Vaches village.

Sault au Mouton river has a channel, which is navigable at high water, but is very dangerous on account of boulders.

The work done during the fiscal year 1908-9, was the removal of boulders, commenced in 1906-7.

Work started September 1, and was discontinued October 1.

Total expenditure, \$33.75.

## SHIGAWAKE.

Shigawake, Bonaventure county, is a post village situated on the north shore of the Baie-des-Chaleurs, some 5 miles from Paspébiac. The village is built at the mouth of the river of the same name.

During the fiscal year 1908-9, in order to protect the road alongside the river leading to the beach, also to prevent the flooding of the mills, a channel was blasted out through the big boulder situated at the mouth of the river, some protection work was also done along the bank of the river.

The work was carried out by day labour, at a cost of \$181.30, it was commenced on October 12, and completed on November 14.

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## SOREL (DEEP WATER WHARF).

Sorel is an incorporated city, the chef lieu of Richelieu county, situated on the right bank of River Richelieu, at the mouth of Lake St. Peter, on the Quebec, Montreal and Southern railway and 52 miles northeast of Montreal, 33 miles from St. Hilaira.

On June 25, 1901, a contract was entered into between the Crown and Messrs. McAuliff, Poupore, Malone and Weddell, for the construction of a high level dock and for some dredging at the mouth of the River Richelieu, on the east bank, opposite the city of Sorel. The contract called for:

1. The construction along the Richelieu river of 600 feet of pile trestle work, backed with earth and stone filling to a width of 196 feet, measured on top from the side face of cribwork;

2. The construction of 700 feet of close-faced cribwork, continued for 100 feet in the direction of piling above mentioned, thence along the St. Lawrence, turning in an easterly direction at an angle of 123 degrees, the whole being stone-filled and backed with earth and stone filling to a width of 196 feet measured on top from outside face of cribwork;

3. The construction of 110 feet of pile work at eastern end of the earth and stone embankment;

4. The dredging necessary for the cribwork foundations, to a depth of 34 feet below extreme low water level, and some other dredging to 30 feet in order to permit easy access to wharf. Contract price, \$855,632.43.

Work was commenced in the autumn of 1901 and completed in April, 1905.

On August 7, 1907, a contract was entered into between the Crown and Mr. J. E. Beauchemin of Sorel, for the construction of cribs in front of the trestle wharf mentioned above. Contract price \$125,000. It called for:

1. The construction of six close-faced cribs, from 18 to 40 feet wide at bottom, from 15 to 18 wide at top, 41 feet high and a total length of 687 feet with necessary filling;

2. Dredging, to 30 feet below extreme low water level, a foundation for the above, including, a five foot deep, stone seat, from 40 to 62 feet wide;

3. Placing some 1,116 cubic yards of stone to form revetment at northeast end of old structure in the St. Lawrence.

Work was commenced in November, 1907; at the end of the fiscal year 1907-8, the revetment above mentioned had been made, a basin for boats of 8 feet draught dredged inside the 'L'-shaped high level wharf, and a claim of \$18,763 paid Messrs. McAuliff, Poupore, Malone & Weddell for extra dredging done in connection with their contract of 1901-5. Total expenditure during fiscal year was \$54,081.29.

On August 25, 1908, an extra of \$37,839.20 was awarded to contractor for some changes in original plan: the cribs, instead of resting on the 5-foot stone foundation specified, to rest on four rows of piles, driven from 25 to 35 feet into the ground, the first row immediately under the face timbers, the second and third rows 5 feet apart, and the last row from 8 to 10 feet from the third; piles of each row being 2 feet apart, centre to centre.

Up to March 31, 1909, all the pile foundation had been driven; the crib nearest to the St. Lawrence river, built 28 feet, sunk in place and fully ballasted, and the other 5 cribs, built to a height of 26 feet and floated. Expenditure during fiscal year was \$84,237.48.

## SQUATECK.

Some 18 miles east of Lake Temiscouata, in the county of Temiscouata, is situated Squateck settlement, which, although quite new, will soon be the centre of a flourishing agricultural district.

The only means of transportation for the community is via Cabano and through Lake Temiscouata.

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In the year 1907-8, in order to provide some accommodation and to give facilities of landing to the inhabitants of this isolated place, the construction of a landing pier was commenced, on the east side of the lake, opposite Cabano.

During the last fiscal year, the work was completed.

The wharf is now 150 feet in length, 24 feet width, for a length of 100 feet and 55 feet for the remaining part.

It is open-faced cribwork, sheathed with deals 3 inches thick. The wharf is provided with high and low level floorings and slips to facilitate the landing at the various heights of the water in the lake.

The work was carried on the months of September and October, 1908, and completed in March, 1909.

Expenditure for the fiscal year ended March 31, 1909, was \$2,352.82.

## TADOUSAC.

Tadousac, or l'Anse à l'Eau, the chef-lieu of the county of Saguenay, is a watering place on the northeastern side of the Saguenay river, about 5 miles above its mouth, which is much frequented by tourists and health seekers during the summer season.

The work done during the fiscal year 1908-9 was as follows: flooring 250 feet long was put on the roadway; 600 feet of sidewalk, as well as the floor of the wharf, were also repaired; a sheathing was put around the wharf for a length of 80 feet; the roof of the freight shed was restored, and a railing was put on the promenade leading to the salmon reservoir.

The work started in August and was discontinued at the end of September.

Spring tides rise 17 feet; neaps, 10 feet.

Total amount expended, \$926.28.

## TROIS PISTOLES.

Trois Pistoles, in the county of Témiscouata, is an important village on the Intercolonial Railway, 25 miles below Rivière du Loup. The land, in the vicinity, is fertile and the place is flourishing. It is somewhat frequented as a summer resort.

Along the River Trois Pistoles, stand large saw and pulp mills. The government wharf is located on the west side of the entrance to the harbour.

The repairs to the wharf, performed during the fiscal year ended March 31, 1909, were the following: A surface of 2,800 square feet of the face-timbers was sheathed with spruce deals 4 inches thick; 220 feet of capping pieces were replaced, and the hardwood sheathing was repaired. The work began on August 20 and was completed on September 30.

Spring tides rise 18 feet; neaps, 10 feet.

Between the wharf and the breakwater is a rock partly obstructing the harbour. Two years ago, the blasting of the rock was begun. The work was continued and completed during the fiscal year ended March 31, 1909. About 875 cubic yards of solid rock were blasted and removed. Some 600 cubic yards of boulders were also broken and taken away. The entrance to the harbour is now sufficiently wide. The work commenced on August 20 and was completed on October 31.

The expenditure amounted to \$2,500.01.

## VARENNES.

Varennes, a parish and post village in Verchères county, on the St. Lawrence river, and a station on the Quebec, Montreal and Southern Railway. Population of parish, 2,342.

During March, 1905, the department entered into negotiations with the Richelieu and Ontario Navigation Company for the purpose of acquiring their wharf at Varennes, theirs being found the best location available. The sum of \$4,000 was

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offered to the company for their property and accepted, but the transfer had not been completed on March 31 of that year. The old wharf proper has an outside face length of 60 feet, including icebreaker, and a depth of 60 feet. The adjoining plot of land extending to and along public road, and included with the purchase of wharf, is of irregular shape and forms an area of 17,365 square feet.

In September, 1908, work of reconstruction and enlargement of old structure was begun. A crib substructure, 30 feet outside face and 50 feet long, shoreward (latter making an angle of 116 degrees and 20 minutes with outside face) was built of close-faced timber and sunk along upstream side of old wharf. The timber of the latter was razed to one foot above low water level. All along downstream side, some 80 feet, and outer face another 90 feet, was built a concrete wall, 12 feet high, 5 feet and  $1\frac{1}{2}$  wide at bottom and top, respectively, with outer face sloped one in 12 and inner face with a one foot and a half retreat four feet from bottom and reinforced horizontally and vertically every five feet with one and a half-inch iron bars. The inclosure was filled in with stone and topped with a six-inch concrete flooring on a level of 12 feet above low water. The whole upstream side of wharf to public road, 171 feet, was protected by an ice-breaker, inclined one in one, with one foot concrete covering, starting two feet above low water and running up to six feet above flooring of headblock. All along said ice-breaker, was built, in six-inch concrete, a three-foot wide sidewalk, standing five feet above flooring of headblock.

The work, which was done by day labour, was completed November 30, with an expenditure, including purchase price of old wharf, of \$10,996.48.

## VAUDREUIL.

Vaudreuil is a post village and parish in Vaudreuil county, on the Ottawa river, with port on the lake of Two Mountains, and on the Canadian Pacific Railway and Grand Trunk Railway,  $24\frac{1}{2}$  miles from Montreal.

In October, 1908, the reconstruction of municipal landing pier at the foot of Wharf street, vested in the Crown the preceding year, was begun. The headblock was raised to one foot below low water level, the approach razed to the ground, and the whole rebuilt up to seven feet above low water. The structure consists of:—

1. A crib headblock, 65 feet long, 23 feet wide, standing 11 feet high in four feet of water at lowest level.
2. A crib and span approach, 208 feet six inches long and 16 feet wide.
3. A crib and stone embankment some 57 feet long and  $24\frac{1}{2}$  feet wide. Total length of wharf, 288 feet 6 inches.
4. A freight shed 16 by 20 feet at northeastern corner of headblock.

Work was completed at the end of March, 1909, at an expenditure, for fiscal year, of \$4,542.97, exclusive of dredging.

## WOODMAN'S BEACH.

Woodman's Beach, a meeting place for fishermen, situated on the north shore of the Baie-des-Chaleurs. Bonaventure county, some 4 miles east of New Richmond.

In order to provide accommodation to fishermen and to shelter their boats, a small breakwater, 70 feet long, 14 feet wide and 9 feet high, has been built at that place.

The work, carried on by day labour, at a cost of \$499.50 was begun on September 23, and completed on October 5.



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## PROVINCE OF ONTARIO.

## ALLANDALE.

Allandale, Simcoe county, a ward of the town of Barrie, is situated on Kempenfeldt bay, an arm of Lake Simcoe, distant 66 miles northwest of Toronto on the Grand Trunk Railway.

On June 11, 1908, authority was given to expend the sum of \$150 in repairs to the approach to the wharf at this place by day labour.

The work consisted in renewing the approach, where it joins the cribwork head-block, and in gravelling the entire approach.

Total expenditure for fiscal year, 1908-9, \$127.30.

## AMHERSTBURG.

The town of Amherstburg, county of Essex, in the township of Malden, is situated on the east bank of the Detroit river, about 5 miles from Lake Erie, and 15 miles south of Windsor, to which place it is connected by an electric car service. The Michigan Central Railway also runs into Amherstburg. Population about 2,500. It is one of the oldest settlements in Ontario, and a port of entry.

On November 8, 1907, authority was received to expend, by day labour, the sum of \$1,000, in the protection of Malden front, by the placing of stone rip-rap along same. On March 31, 1908, this work had not been completed.

At the last session of parliament, the sum of \$5,000 was appropriated for the protection of the east bank of the Detroit river, in the township of Malden, immediately south of Amherstburg, which had suffered severely from erosion, and, on August 29, 1908, authority was received to expend this grant, by day labour. Operations were commenced on September 11 and continued until December 5, 1908, when work closed down for the winter. Up to that date, some 930 lineal feet of the bank was protected by the erection of a dry wall, formed of boulders and reaching to a height of about one foot above water level. There still remains about 750 lineal feet of shore line that will require to be protected after the work in hand is completed.

On August 26, 1908, authority was received to expend, by day labour, the sum of \$150, for the removal of boulders which were found to form obstructions in harbour, opposite docks, and this amount was subsequently increased by an additional \$225. It was found impossible to secure the necessary plant for the performance of the work until November 6, 1908. Some 14 large boulders, averaging about 10 tons weight were removed.

Total expenditure during fiscal year 1908-9 was \$480.98.

## ARNPRIOR.

Arnprior (population 4,500), county of South Renfrew, is located at the mouth of the Madawaska, on the south shore of Chats lake, which is an expansion of the Ottawa river, navigable for 20 miles.

At its session of 1908, parliament granted \$4,000 towards the construction of a public wharf at this place. An examination, survey and report was made with the view of restoring the old town dock, and later to extend the landing face to deeper water.

A by-law was passed October 5, transferring the old wharf to the Crown. Work of renewing the floor system commenced October 12 and was discontinued October 19.

Although the timber to renew the floor system was on hand, reconstruction could not proceed owing to the rotten condition of the supporting piers which had to be removed.

Total expenditure, \$874.63.

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## BAYFIELD.

Bayfield is a village, situated on the eastern shore of Lake Huron, in the county of Huron, at the mouth of Bayfield river, 12 miles south of the town of Goderich. Population about 600.

At the last session of parliament, the sum of \$1,800 was appropriated for repairs to piers, and, on August 10, 1908, authority was received to expend this grant by day labour.

Operations were commenced on September 1 and were continued until December 22, 1908, when work was completed. The work performed consisted of general repairs to north pier, including the renewal of portions of the face-timbers and decking as also the renewal of the filling of inner half of 120 feet of this pier; the construction of an extension to inner end of north pier, consisting of close-face cribwork, 80 feet in length, 5 feet 8 inches in height and 10 feet in breadth, filled with stone ballast, and constructed with a view to preventing spring freshets from cutting between the inner end of this pier and the high river bank adjoining. Close 3-inch sheet-piling was spiked on 45 feet of the inner end of south pier, and on the river side, while 150 running feet of the south face of this pier was sheeted with 3-inch plank, 10 feet long, in order to prevent stone-filling from falling out through the decayed face-timbers. About 90 feet of the approach to south pier was then repaired by the renewal of a greater portion of the face-timbers forming revetment wall for this approach, and the renewal and levelling of a portion of the filling in rear of this revetment wall.

During the fiscal year 1908-9 the total expenditure was \$1,800.

## BAYSVILLE.

Baysville, district of Muskoka, is a small village of 200 inhabitants, situated on the south branch of the Muskoka river, distant 16 miles east of Bracebridge, the nearest railway station.

On August 18, 1908, authority was given to expend the sum of \$600 in enlarging the wharf by day labour on the east shore of the river.

Work was commenced February 1 and completed March 27; it consisted in making an extension, 50 feet by 10 feet, forming an 'L' to the present wharf.

Total expenditure for fiscal year, 1908-9, \$520.75.

## BEAVERTON.

Beaverton, Ontario county, is situated on the east shore of Lake Simcoe, about 60 miles northeast of Toronto on the Grand Trunk Railway and Canadian Northern Railway. Population, 2,500.

At the last session of parliament, the sum of \$3,500 was appropriated for harbour improvements at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 1 and completed November 30.

It consisted in filling and grading at rear of sheet-piling on the north side of the harbour; filling with stone and brush at the rear of the breakwater on the northerly side, and grading the approach on the northerly side.

Total expenditure for fiscal year, \$1908-9, \$987.16.

## BELLE RIVER.

Belle River is a prosperous village, situated on the south shore of Lake St. Clair, and on the London and Windsor division of the Grand Trunk Railway, 93 miles from London and 17 miles from Windsor. It is a French settlement of about 1,000 inhabitants.

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At the last session of parliament the sum of \$1,000 was appropriated for dredging, close-piling, &c., and, on August 10, 1908, authority was received to expend the grant by day labour.

Work was started on September 7 and continued until November 30; it consisted of the construction of 106½ lineal feet of 4-inch close sheet-piling on inner end and on easterly side of harbour, and of a return of 10½ lineal feet of 2-inch piling, all securely tied back by 1-inch iron tie-rods to 11 anchor posts, driven in rear. Seven guard-piles, 18 feet long were driven at intervals along the face of the piling, while the waling along face of sheet-piling was supported by 11 oak piles, 16 feet long and well driven. The piling was reinforced by the driving of four oak anchor piles, 18 feet long, in rear, and to which sheet-piling was well tied back.

Some 550 yards of material were excavated by dredge at inner end of and on easterly side of harbour, the material being over-cast to provide filling in rear of new sheeting constructed.

The total expenditure during the fiscal year 1908-9 was \$990.32.

## BEWDLEY.

Bewdley, Northumberland county, is situated at the west end of Rice Lake, and is a village of some 50 inhabitants to which a large portion of the surrounding country, rich in agriculture, is tributary.

At the last session of parliament the sum of \$1,000 was appropriated for the construction of a wharf at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced October 1 and suspended March 31.

It consisted in the construction of a pile wharf, 30 feet long by 20 feet wide, and a stone approach connecting it with the shore, 90 feet long by 12 feet wide on top.

Total expenditure for fiscal year, 1908-9, \$896.91.

## BIRDSALL.

Birdsall, Northumberland county, is situated on the north shore of Rice lake, and is on the G.T.R., some 14 miles east of Peterborough. It is a small settlement lying in the centre of a well-settled and fertile agricultural district.

At the last session of parliament, the sum of \$3,850 was appropriated for the construction of a wharf at this place, and, on August 8 last, instructions were given to proceed with the work by day labour.

Work commenced September 1, and completed November 30.

Consisted in the construction of a solid block of cribwork, 100 feet long by 16 feet wide on top, 22 feet wide at the bottom and 10 feet high at outer end, having sloping sides and connected with the shore by a stone approach, 85 feet long by 16 feet wide on top.

Total expenditure for fiscal year 1908-9, \$3,849.10.

## BLACK RIVER.

Black river, Ontario county, flows through the township of Rama and discharges into the Severn river on lots 23 and 24, concession M. in said township, and drains a considerable area of same.

At the last session of parliament, the sum of \$3,000 was appropriated for improvements on this river, and on August 8 last, authority was given to proceed with the work by day labour.

Work at both points was commenced November 26, completed March 4, and consisted in the removal of some 825 cubic yards of rock and 25 cubic yards of earth.

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and the removal of 840 cubic yards of rock taken from some thirteen rocky obstructions, in order to give greater waterway for the relief of the spring freshets.

Total expenditure for fiscal year 1908-9, \$2,998.63.

#### BLANCHE RIVER.

##### *Dredging.*

The Blanche river, Nipissing district, empties into Lake Timiskaming, near the Quebec boundary. This stream, navigable for 26 miles to Tomstown, is used by settlers and lumber merchants, as an outlet. On account of landslides, the bed of the river is much obstructed by snags. In 1905, work of removing these was started.

Parliament, at its session of 1908, granted \$13,000 to continue the improvements on this river and on the south branch, above Charlton.

Work of improvement on Blanche river proper was resumed October 14. Owing to the extreme low stage of the river, boats could not go above Hilliardton, 8 miles below Towstown. The dredge commenced digging at this point, making a channel 260 feet long through a sand bar. It was then removed upstream 3 miles, where a channel was made through a gravel bar extending navigation to within 2 miles of Tomstown. A channel was then made through a clay shoal near the mouth of the river and the plant reached Haileybury early in November, where a channel was made, to reach the ways, partly through silt and quicksand. The plant was placed in winter quarters during the last week of November.

Total expenditure during last fiscal year, \$2,216.41.

#### BLANCHE RIVER.

##### *(South Branch.)*

The south branch of Blanche river flows southeasterly parallel to and about 11 miles northeast of the Montreal river. The foot of navigation is at Charlton, the terminus of a spur on the T. & N. O. Ry., and a transfer point for some of the traffic in the Elk Lake and Gowganda mining district.

At its last session, parliament granted \$13,000 to continue improvements on this water course and the main branch which forms part of the Lake Timiskaming navigation.

Work of improvement was resumed June 24, and discontinued October 20, 1908; it consisted in removing snags and deadwood jams and cutting the brush wood, uprooted and overhanging trees in the Narrows between lake expansions, as well as in the lower and upper reaches of this river. During the past season, 8 miles nearly, of the upper river was improved. Navigation now extends over 38 miles.

Total expenditure on the south branch of Blanche river during the last fiscal year, \$11,913.05.

#### BLIND RIVER.

Blind River is a village situated on the north channel, Lake Huron, in the district of Algoma, and is a station on the Canadian Pacific Railway. Extensive lumbering operations are carried on at this place. Population, 2,800.

At the last session of parliament, the sum of \$1,500 was appropriated for the construction of a driveway around the government wharf, at this place, by day labour, and, on May 22 last, authority was given to proceed with the work.

Work was commenced June 1, and completed July 27.

It consisted in the construction of a timber driveway on piles, across the west end and along the north side of the warehouse; the portion across the west end is 52 feet long by 14 feet wide and that along the north side is 16 feet wide by 158 feet in length.

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*Dredging.*

On May 23 last, authority was given to perform certain dredging at this place, and a contract was awarded to the C. S. Bonne Co., at the following prices per cubic yard, scow measurement, boulders \$3, all other materials 23 cents, bucket measurement, boulders \$3, all other materials 22 cents.

This work was commenced June 8, and completed September 12, and consisted in deepening and widening the channel and approaches to the new government wharf to a depth of 15 feet and a width of 118 feet to 215 feet, also deepening the turning basin at the government wharf to a depth of 15 feet.

Authority was also given on July 20 last, to perform two weeks' dredging in the approaches to and in front and alongside the wharfs of the White Pine Lumber Co., of this place, and the work was duly performed.

Total expenditure for fiscal year 1908-9, \$20,413.23.

## BOWMANVILLE.

*Dredging.*

Bowmanville, or Port Darlington, Durham county, is situated on the north shore of Lake Ontario, 43 miles east of Toronto. Population, 3,500.

This harbour, built by the municipality, consists of two parallel piers at the mouth of a small creek. The west jetty is cribwork, 1,180 feet in length by 20 feet in width; the east jetty is 800 feet long, 30 feet in width, except at outer end, where it is 60 feet in width for a length of 240 feet.

On August 7, 1908, authority was given to perform certain dredging at this place, for which a contract was awarded on September 10, last, to Frank Simpson, of Toronto, at the following prices per cubic yard, scow measurement: Boulders, \$2; all other materials, 11½c.; bucket measurement, boulders, \$1.50; all other materials, 11½c.

Work was commenced August 16 and completed September 9, and consisted in dredging between the piers and in the approaches thereto to a depth of 12 feet of water below zero of gauge at Toronto. Some 22,251 cubic yards of material were removed.

Total expenditure for fiscal year, 1908-9, \$2,758.77.

## BRACEBRIDGE.

*Dredging.*

Bracebridge, District of Muskoka, is situated on the north branch of the Muskoka river, Victoria county, 125 miles north of Toronto. Population, 2,500.

On July 16, 1908, authority was given to perform certain dredging at this place, and a dredge was loaned for the work by the Public Works Department of the Ontario government, the federal government paying running expenses.

Work was commenced August 4 and completed December 2.

It consisted in dredging a channel 400 feet in length by 170 feet at the outer end and 180 feet at the easterly or inner end to a depth of 10 feet. The channel dredged leads to the government wharf.

In doing this work, some 10,700 cubic yards of sand were removed.

Total expenditure for fiscal year 1908-9, \$3,365.28.

## BRONTE.

Bronte, Halton county, is a village on the north shore of Lake Ontario, 27 miles southwest of Toronto.

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At the last session of parliament, the sum of \$1,000 was appropriated for repairs to the piers at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced October 1, and completed November 20, and consisted in the construction of a crib 16 feet deep by 16 feet wide and 50 feet long, also a crib 16 feet deep, 20 feet wide and 40 feet long, both of which were sunk in position at the northerly inside end of the east pier, and 18 inches of the superstructure was built over top of both cribs; the whole being filled with stone and decked with gravel.

Total expenditure for fiscal year 1908-9, \$1,000.

#### BRUCE MINES.

Bruce Mines, District of Algoma, is situated on the north shore of Lake Huron, 45 miles southeast of Sault Ste. Marie.

On August 8, 1908, authority was given to expend the sum of \$500 in the renewal of the covering and repairs to the pier at this place by day labour.

Work was commenced October 1 and completed November 20, and consisted in replanking portions of the wharf where required, also protecting the southeast and southwest corners by vertical sheathing, each fastened with two iron bands 4 inches wide by 12 feet long and  $\frac{1}{2}$  inch thick, also new birch waling 180 feet by 8 inches by 10 inches. Two areas have been replanked, one 150 feet by 20 feet, and the other 45 feet by 20 feet.

Total expenditure for fiscal year 1908-9, \$392.26.

#### BURLEIGH FALLS.

Burleigh Falls, is on the route of the Trent Valley canal. At this place, there is a slide with training piers, &c., from which the department derives a revenue.

At its session in 1908, parliament granted \$825 towards required repairs and improvements. The training pier, damaged by ice, was repaired, and a training dyke, 100 feet long, 6 feet wide and 6 feet high, was built to cut off a series of rocky islands below the falls, where logs were impounded and damaged. This structure of open-face cribwork, sheeted, was rock-bolted at the heel and fully ballasted. The granite reef below the falls, which was another source of obstruction, was lowered from two to three feet by blasting out into deep water on one side.

Work was performed October 16 to 30, 1908.

#### BURLINGTON CHANNEL.

Burlington channel, Wentworth county, is simply a cut through a piece of low land which separates Lake Ontario from a large sheet of water called Burlington bay, thereby enabling vessels to reach the wharfs at the city of Hamilton. Over this cut a swing bridge has been erected. The cut is some 120 feet in width and, on the northerly side, has a cribwork pier, some 2,320 feet in length by 20 feet in width and, on the southerly side, a pier 2,650 feet in length by 20 feet in width, also of cribwork.

On August 3, 1906, authority was given to prepare contract plans and specifications for the construction of a pier head on the east or lake end of the south pier at this place for which a contract was awarded on June 20, 1907, to Mr. Jos. Battle, of Thorold, for the sum of \$9,490.20.

This work was commenced May 27 and completed August 27, and consisted in the construction of a pier head of cribwork substructure with concrete superstructure, having a parapet wall along the south and east sides. The east end of the pier head is V-shaped and is 40 feet by 38 feet over all.

On April 11, 1908, authority was given to expend the sum of \$200 in repairing the driveway from the highway to the south pier.

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Work was commenced 25th and completed June 27, and consisted in the placing of large stone along the westerly edge of driveway and filling at the rear with small rubble and giving all a coat of gravel taken off the neighbouring lake shore.

On April 14, authority was given to expend the sum of \$400 in removing certain obstructions from the channel.

This work was commenced June 5 and completed October 30, and consisted in the removal of 20 piles, the drawing of 34 piles from the wrecked sheet piling, the removal of 186 lineal feet of oak waling and the replacing of 10 feet 6 inches of close sheet piling in the south pier.

On June 13, authority was given to place 1,000 cubic yards of large stone on the south pier to protect the remains of the damaged pier from further injury. Work was begun in September and completed in November.

On May 16, authority was given to expend the sum of \$1,400 for the removal of the wrecked portion of the superstructure of the south pier to prepare same for the placing thereon of large stone. Work was commenced June 1 and completed August 30.

On July 30, authority was given to expend the sum of \$12,600 in the renewing of the south pier at the easterly end immediately adjoining the new pier head.

This work commenced August 1, and completed November 30, consisted in the construction of a crib 40 feet square by 18 feet deep, also one 35 feet long by 40 feet wide at easterly end and 27 feet wide at westerly end with an average depth of 6 feet, both having concrete superstructure and parapet. This makes a headblock, 115 feet in length, completed.

On December 2, authority was given to expend the sum of \$1,200 in placing stone on the south pier.

This work commenced December 9 and was completed December 19; some 77 cubic yards of large stone and 257 cubic yards of smaller stone were used in the work and as talus. The remainder of stone purchased will be used in connection with the proposed repairs to the south pier.

On February 6, 1909, authority was given to expend the sum of \$60 in slight general repairs to the swing bridge, including the gates, sprocket wheel, &c., and the charge for same is included in maintenance of bridge.

The swing bridge staff were employed from April 1 to January 23, when the lights were put out and navigation closed for the season.

Total expenditure for fiscal year, 1908-9, \$48,314.03.

## CALLNDAR.

Callendar, Parry Sound district, is a town of some 1,000 inhabitants, situated on the east shore of Lake Nipissing, on the North Bay branch of the Grand Trunk Railway, 9 miles south of North Bay. Lumbering and general business are the chief industries.

At the last session of parliament, the sum of \$1,000 was appropriated for the extension of the wharf at this place, and on August 20, last, authority was given to proceed with the work by day labour.

The work which was commenced on September 1 and completed October 12, consisted in extending the existing wharf out 44 feet, making the total length of crib-work with spaces 184 feet by 20 feet in width, connected with the shore by a stone approach, 82 feet in length by 16 feet width on top.

Total expenditure for fiscal year 1908-9, \$1,118.23.

## CAPE CROKER.

Cape Croker, Bruce county, is an Indian settlement and reservation on the west shore of the Georgian Bay, 15 miles northeast of Wiarton.

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At the last session of parliament, the sum of \$2,000 was appropriated for the addition of a headblock to the wharf on the south side of the portage across the Indian reserve; this sum was supplemented by an equal grant from the Department of Indian Affairs, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced on September 15, and is not yet completed. It consists in the construction of an extension to the present wharf, 80 feet in length by 20 feet in width, composed of close-faced cribwork.

Total expenditure for fiscal year 1908-9, \$1,417.33.

#### CHARLTON.

Charlton, a village in Nipissing district, is located on the south branch of Blanche river, 3 miles above Tomstown, and at the foot of a chain of lakes, on which navigation has been improved for a distance of some 38 miles. Charlton is connected with the T. & N. O. Ry. by a spur to Englehart. Charlton is a transfer point for some of the traffic into the Elk City and Gowganda mining districts. Population 200.

At its session of 1908, parliament appropriated \$5,000 for wharfs on Blanche river. The construction of a landing at this place being authorized, work started September 16, and continued to October 28, 1908.

The structure consists of a landing head, 48 feet square, drawing 7 feet and built 4 feet above L.W.L., on open crib-work piers; an approach, 16 feet wide, 48 feet long and framed bents and a warehouse, 16 by 32 feet, shingled.

#### CHATHAM.

The city of Chatham is situated on the River Thames, in the county of Kent, about 18 miles east from Lake St. Clair, and on the lines of three railroads, i.e. G.T.R., C.P.R. and Pere Marquette. It is 64½ miles west of the City of London and 47 miles east of the City of Windsor. It is a prosperous manufacturing place and has been steadily increasing in importance in the last ten years.

At the last session of parliament, the sum of \$33,000 was appropriated for work in the vicinity of Chatham, at the following points: St. Joseph's Hospital; Barrack Point; Tecumseh Park and McGregor's Creek.

#### ST. JOSEPH'S HOSPITAL.

On the 4th December, 1907, a contract, in the sum of \$3,562.50, was awarded for the construction of 375 feet of timber sheet-piling retaining wall, with a view to protecting the bank in rear of St. Joseph's hospital from further erosion. Work was commenced on August 17, and completed on September 21, 1908; it consisted of close sheet-piling of southern pine, 8 inches thick, 18 feet long with an average penetration of 10 feet, and reaching to a height of 9 feet 6 inches above L.W.L.

For the proper completion of the work it was found necessary to construct a length of 396 feet instead of 375 feet. In accordance with arrangements previously made, the necessary grading in rear of the piling was performed by the hospital authorities.

#### TECUMSEH PARK (BARRACK POINT.)

At the beginning of the year, the reinforcing of the concrete revetment wall, at Barrack Point, Tecumseh Park, was in execution. Owing to the high water level, which existed until the month of July, the work was only completed on August 19, 1908.

On December 4, 1907, a contract was awarded for the construction of an extension to the concrete retaining wall, Barrack Point, in the sum of \$2,205. Operations were commenced on June 18, and were completed about August 28, 1908.



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The work performed consisted of the construction of a concrete retaining wall, 120 feet long, 3 feet 6 inches wide at base and 2 feet 6 inches wide at top, reaching to a height of 8 feet above L.W.L., and built upon a pile foundation. A landing slip with stairway reaching 10 feet 8 inches inward from the face of the work was also constructed. The necessary grading and filling in rear was performed by the city of Chatham in accordance with an agreement previously made with them.

On September 14, 1908, authority was received to construct an iron railing around the whole of this concrete wall for the safety of the public, and the work was completed on November 15.

## CHUTE A BLONDEAU.

Chute a Blondeau is a post village on the Ottawa river, in Prescott county, 5 miles from Pointe Fortune and 7 miles from Hawkesbury on the G.T.R.

The work in connection with the contract, entered into April 29, 1908, for the construction of a landing pier at Chute a Blondeau, was started in July and the structure completed September 18 following. The structure is situated immediately in front of the old McAllister's wharf, bought for the purpose, at a cost of \$800, including land, and consists of:—

A 10-foot crib wall, 100 feet long, outer face measure, with a return wing of 30 feet at down stream end, and an icebreaker, 40 feet long and 19 feet wide at other end, the lower 50 feet standing 16 feet high, and the other half 22 feet high, both into from  $6\frac{1}{2}$  to 7 feet of water at lowest level. The intervening space between crib wall and the old wharf was filled in with stone. Contract price, \$6,500.

The total expenditure for 1908-9, was \$6,906.62.

## COBOURG.

Cobourg is a large town on the north shore of Lake Ontario, on the main line of the Grand Trunk Railway, 88 miles east of Toronto. Population, 5,000.

At the last session of parliament, the sum of \$45,000 was appropriated for the extension of breakwaters and dredging at this place, and on August 14, 1908, instructions were given to prepare contract plans and specifications for same.

The plans and specifications were prepared at Ottawa, and on August 15 a contract was awarded to the Randolph MacDonald Co., for the sum of \$139,000 to perform the work.

The actual construction has not yet been commenced, but the contractors have, on the ground, a large quantity of the material.

At the last session of parliament, also, the sum of \$2,315 was appropriated for repairs to the piers, and, on May 30, 1908, authority was given to proceed with the work by day labour.

Work was commenced June 11 and completed September 30; it consisted in rebuilding a small crib on the east side of the east pier and making general repairs to the existing structures. The crib is 12 feet wide by 48 feet in length.

Total expenditure for fiscal year 1908-9, is \$2,681.69.

## COCKBURN ISLAND.

Cockburn Island, District of Algoma, is situated on the west shore of Manitoulin island.

On October 3, 1908, the sum of \$750 was authorized for repairs to wharf at this place, to be done by day labour.

Work was commenced October 28 and completed March 31, and consisted in lowering 260 feet of the wharf one foot, also redecking same with new stringers, and planking, where necessary.

Total expenditure for fiscal year, 1908-9, \$745.81.

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## COLBORNE.

Colborne, Northumberland county, is situated on the north shore of Lake Ontario, distant 14 miles east of Cobourg. Population, 1,000.

On November 8, 1907, a contract was awarded to Messrs. Kastner & Porter, of Warton, to construct a wharf at this place for the sum of \$12,990.

Work was commenced November 26, 1907, and completed August 31, 1908. It consisted in the construction of a stone approach, 350 feet in length by 16 feet wide on top, and of a wharf of cribs and spaces, 288 feet in length by 20 feet in width.

Total expenditure for fiscal year 1908-9, \$13,383.

## COLCHESTER.

Colchester is a village, situated on the north shore of Lake Erie, in the county of Essex, about 4 miles south of Harrow, and about 14 miles from the Detroit river; it is also about 3 miles from Oxley, a favourite summer resort. Harrow is the nearest point with railway connection. Population about 200.

On June 6, 1908, authority was received to expend the sum of \$100 by day labour, in repairing slight erosion which had occurred to the stone approach. Work was commenced on the 22nd and completed on June 25.

Total expenditure during fiscal year 1908-9, \$94.22.

## COLLINGWOOD.

Collingwood, Simcoe county, is situated on the south shore of Georgian bay, 94 miles by rail from Toronto. It is the terminus of the Northern and Hamilton and Northwestern Railway. There is an extensive trade in shipbuilding, grain and lumber, and it is the starting point for the steamers for Owen Sound, Sault Ste. Marie and Parry Sound. Population, 5,000.

On May 2, 1908, authority was given to perform certain dredging at this place, the work to be done by the C. S. Boone Co., of Toronto, at the following prices per cubic yard, scow measurement, and bucket measurement; boulders, \$2.18; all other materials, 75c.

Work was commenced April 28, and closed for the season November 14; it consisted in dredging to 12 feet of water east of the elevator, in cleaning and removing obstructions from the main channel, also performing some work at the wharf of the Collingwood Meat Co.

During the season, the dredge removed 6,870 cubic yards of rock and 30,020 cubic yards of other materials from area east of the elevator and main channel. While at the Meat Company's wharf, some 5,955 cubic yards of other materials were removed, and paid for at 35c. per cubic yard.

Total expenditure for fiscal year 1908-9, \$50,925.74.

## COLPOY'S BAY.

Colpoy's Bay, a settlement in Bruce county, is situated on the west side of Colpoy's bay; an arm of Georgian bay, and is 3 miles north of Warton. Population 50.

At the last session of parliament, the sum of \$2,500 was appropriated for filling in gaps, in stem of existing wharf, with cribwork and repairing the superstructure and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 15 and completed December 5, consisted in filling in the openings in the present wharf with cribwork and reconstructing the entire superstructure of the old wharf. Four new cribs, 18 feet by 20 feet, and one 30 feet by 20 feet have been placed in the work.

Total expenditure for fiscal year 1908-9, \$2,414.69.

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## CROW'S LANDING.

Crow's Landing, Peterborough county, is situated on the south shore of Stoney lake, 22 miles northeast from Peterborough and is a small summer resort.

On July 3, 1908, authority was given to expend the sum of \$100 in repairs to the wharf at this place by day labour.

Work was commenced August 24, completed August 31, and consisted in repairing the approach with large stone to resist the action of high water and ice.

Total expenditure for fiscal year 1908-9, \$98.59.

## CUMBERLAND.

Cumberland village, Russell county, is located 20 miles below Ottawa; 2 miles south of Buckingham Junction, on the Canadian Pacific Railway. Besides the regular ferry service, the public wharf, built in 1905, provides for considerable traffic from passenger and freight boats plying on the Ottawa river.

In May, 1908, the extreme flood stage of the river made it necessary to plank over the high-level approach at a cost of \$10. The warehouse was cleaned and painted, the handrailing was repaired and the low-level approaches were regraded August 27 to September 3 at a cost of \$67.98.

## CURTIS LANDING.

Curtis Landing, Northumberland county, is situated on the south shore of Rice lake.

At the last session of parliament, the sum of \$1,000 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

The work, which lasted from October 1 to November 14, consisted in the construction of a wharf of cribwork, 30 feet long by 20 feet wide, connected with the shore by a stone approach, 15 feet wide on top and 75 feet in length.

Total expenditure for fiscal year 1908-9, \$987.36.

## DAWSON POINT.

Dawson Point is a landing on Lake Timiskaming, opposite Haileybury, in the district of Nipissing. In 1901, a wharf was commenced at this point but not carried to completion.

At its last session, parliament granted \$950 for the purpose of completing this structure.

The work was performed from August 22, to September 10.

The structure consists of an open-face cribwork block, 30 by 20 feet, drawing 8 feet of water along the landing face and built 13 feet above the O.L.W.L., sheeted and fendered to a 12 on 1 batter, with slip and mooring posts, and a stone approach, 30 to 20 feet wide on top and 110 feet long.

During the fiscal year of 1908-9, the total expenditure amounted to \$951.86.

## DYER BAY.

Dyer Bay, Bruce county, is situated on the east shore of the Bruce Peninsula, 16 miles from Lions Head. Population, 150.

On September 5, 1908, authority was given to expend by day labour the sum of \$700 in repairs to the superstructure of the wharf and approach.

Work was commenced November 10 and completed November 30.

Total expenditure for fiscal year, 1908-9, \$659.47.

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## FENELON FALLS.

Fenelon Falls, Victoria county, is on the route of the Trent Valley canal. At this point there are slide works which are a source of revenue to the department.

At its session of 1908, parliament granted \$500 for urgent repairs to the slide works.

The works were built nine years ago and during September last underwent repairs, which consisted in erecting a cofferdam, placing new gages, renewing part of the sheeting, hewing true the worn stop logs and bolting them in pairs, placing wrought iron straps on upper stop logs, and procuring three new stop logs of Douglas fir to complete the full height.

## FORT WILLIAM.

Fort William, a city of 17,000 inhabitants, is situated at the west end of Lake Superior, at the mouth of the Kaministiquia river, in the district of Thunder Bay. It is the principal lake port on the north shore of Lake Superior and the terminus of two transcontinental railroads.

Through this port, the terminus of lake navigation, the bulk of the grain, grown in the Canadian west, passes on its way to the markets of the east.

At the last session of parliament, the sum of \$500,000 was appropriated for the harbours of Fort William and Port Arthur.

Dredging operations were resumed in this harbour for fiscal year 1908-9 on April 23 :

Dredge 'No. 5' started April 23.

Dredge 'Dominion' started May 1.

Dredge 'No. 8' started May 4.

Dredge 'No. 6' started May 7.

These dredges were continuously at work, except 'No. 6,' which was withdrawn from this work on September 1. Dredge 'No. 15' being substituted on September 9. Two dredges, namely 'No. 8' and 'No. 5' operated day and night from May 17 to October 31.

The sections dredged over are as follows :—

## KAMINISTQUIA RIVER.

*Grand Trunk Pacific Dock to Canadian Northern Dock—*

The channel in this section was widened to full width of river and deepened to grade, covering a length of 3,600 feet, by an average width of 300 feet.

*Elevator 'D.'—*

Shoal areas, in front of this elevator, were removed, covering a length of 1,100 feet by an average width of 100 feet.

*Consolidated Elevator—*

One dredge cut was made in front of this dock, extending from the west end of old Neebing dock to the west end of Consolidated Dock.

*Opposite Ogilvie's Elevator—*

Shoal areas on south side of river, covering a length of 700 feet, with a width of 100 feet, were removed.

## MISSION RIVER.

The Mission river was deepened and widened from its junction with the Kaministiquia river to the shore line of Thunder Bay, being a length of two miles 600 feet and an average width of 240 feet.

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*Grand Trunk Pacific Basin—*

Dredging was extensively carried on in excavating this area. Three dredges were employed during most of the season. The area excavated was 1,850 feet in length by an average width of 600 feet.

## MCKELLAR RIVER.

A small channel was partly dredged from the Kaministiquia down this river towards lot 6, being 700 feet in length, with an average width of 100 feet.

A total of 2,883,607 cubic yards of material were removed from the areas mentioned above, from April 23 to December 4, when dredges were withdrawn for the season, made up as follows:—

South side of Kaministiquia.. . . . .	37,259
McKellar river.. . . . .	23,240
Consolidated elevator.. . . . .	1,581
Grand Trunk Pacific bridge to Grand Trunk Pacific dock..	123,457
Mission river near Kaministiquia.. . . . .	712,396
Mission south end.. . . . .	1,881,749
Grand Trunk Pacific bridge to Canadian Northern Ry..	62,805
Elevator 'D'.. . . . .	16,510
Canada Foundry.. . . . .	3,641
Kaministiquia river off McKellar.. . . . .	20,969

Total for 1908-9.. . . . .	2,883,607
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Total expenditure during the last fiscal year, \$377,109.31.

## GODERICH.

Goderich is the county town of the county of Huron, situated on the easterly shore of Lake Huron, at the mouth of the Maitland river, about 68 miles from Sarnia, and 63 miles from London. It is the terminus of the Buffalo and Goderich branch of the G.T.Ry., and of the Guelph and Goderich branch of the C.P.Ry. Population, about 6,000. It possesses many industries and is a progressive and thriving town. Located on the harbour front is one of the largest flour mills in Canada, capacity being 1,200 bbls. per day.

At the last session of parliament, the sum of \$107,300 was appropriated for harbour improvements at this point, as also an additional sum of \$4,205.93 to settle claim of Messrs. Smith & McGillicuddy, in connection with construction of breakwater pier.

On January 23, 1908, a contract for the sum of \$94,700 was awarded for the completion of 500 feet of breakwater at outer entrance to harbour. The substructure of this work, which is composed of close-face cribwork, filled with stone ballast, was completed in 1905; but it had since suffered considerable damage by storms. The work involved in the contract provided for a superstructure of mass concrete, reaching to a level of 8 feet above L.W.L., or zero of gauge in harbour. Construction work was started on May 8, and was proceeded with vigorously until September 12, when the work was completed.

On May 13, 1908, authority was received to accept the contractor's offer to supply and place, for the sum of \$2,000, a double ply of jute to be laid on surface of substructure and reaching to above water level before concrete superstructure was started.

On August 10, 1908, authority was given to expend, by day labour, the sum of \$3,300 for repairs to piers and erection of lights on breakwater. Repairs to piers were commenced on September 1, and were continued until December 24, when work closed down for the winter. It was again resumed on the 2nd, and completed on

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March 31, 1909. It consisted in the renewal of the two upper tiers of timber, on the outer end of south pier, as also of the stringers, decking and a number of cross-ties of 122 lineal feet of this portion of the pier; several mooring posts were renewed and other minor repairs were made to different portions of the north pier.

The total expenditure for the fiscal year was, \$103,186.14.

## GORE'S LANDING.

Gore's Landing, Northumberland county, is a small village of 100 inhabitants, situated on the south shore of Rice lake, 12 miles north of Cobourg, and lies in a fertile district.

At the last session of parliament, the sum of \$1,000 was appropriated for the completion of the wharf at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced April 14, and completed September 24; it consisted in placing stone filling in the wharf.

Total expenditure for fiscal year, 1908-9, \$287.36.

## GRAND BEND.

Grand Bend is a village, situated on the easterly shore of Lake Huron, at the mouth of the Sauble river, about 13 miles from Parkhill, the latter place being the nearest railway station. It is a favourite summer resort, and, in this respect, is increasing rapidly in popularity.

On September 13, 1908, authority was received to expend the sum of \$600 by day labour, in performing urgent repairs required to piers. Operations were commenced on September 23 and continued until November 16, when work closed down for the winter. Work was again resumed on January 22 and completed on February 27, 1909. The work performed consisted of the levelling up of 475 lineal feet of the face-timber of both north and south side of breakwater pier; raising and levelling of a number of stringers and flooring, and other minor additions to strengthen the pier.

A ditch was excavated through sand bar which had blocked mouth of river, and in that manner the river was immediately recalled to its true course; a channel about 60 feet wide now flows through the bar.

Total expenditure during fiscal year 1908-9, \$637.93.

## GRIFFITH'S ISLAND.

Griffith's Island, is the largest of three islands lying in the Georgian bay, at the entrance to Colpoys bay, and Owen Sound. It has an area of about 3,000 acres, of which a considerable portion is arable. There is a sawmill on the island near the site of the wharf. The island is fairly well timbered, and a lighthouse stands on its northeasterly side. Population 100.

At the last session of parliament, the sum of \$2,400 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

The work was commenced October 1, and completed January 28. It consisted in the construction of a crib, 16 feet wide on top and 18 feet wide on the bottom, by 80 feet long, also two cribs placed alongside the large crib, one 12 feet by 24 feet by 10 feet deep, and the other 12 feet by 16 feet by 9 feet deep. This work connects with a crib 24 feet by 40 feet.

Total expenditure for fiscal year 1908-9, \$2,598.57.

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## HAILEYBURY.

Haileybury, Nipissing District, on the west shore of Lake Timiskaming, is the chief lake port on the route of the T. and N. O. Ry., 108 miles from North Bay, 5 miles from Cobalt, the heart of an important mining district.

The construction of a wharf was commenced in 1900-1, and proceeded with during irregular intervals until its completion, in 1907.

At its session in 1908, parliament granted \$4,000 towards the construction of further dockage at Haileybury. The amount became available too late and was not large enough to be used on any comprehensive scale of improvements. In April, urgent repairs were made to replace the torn waling and bent sheet piles of the Haileybury dock. In June, while the Lake Timiskaming plant was being overhauled, some \$50 worth of work was applied to regrade the wharf approach, which had scoured during the spring freshet.

Expenditure in 1908-9, \$660.84.

## HAMILTON.

*Dredging.*

Hamilton, Wentworth county, is situated on the south shore of Burlington bay, at the westerly extremity of Lake Ontario. It has extensive manufactures, and is distant 39 miles from Toronto. Population, 65,000.

On May 23, 1908, authority was given to perform certain dredging at this place for which a contract was awarded to W. E. Phin, of Welland, at the following prices per cubic yard: scow measurement and bucket measurement, boulders, \$1.50; all other materials, 15c.

Work was commenced June 6 and closed for the season November 30, and consisted in widening and deepening, to a depth of 18 feet, the approaches to the wharfs of the Hamilton Steamboat Company, the Turbinia wharf and the R. & O. wharfs; also, in front of the new government revetment wall, some 1,230 feet in length to a depth of 12 feet at low water. The material from this latter work was overcast to fill the area at rear thereof, and the city of Hamilton provided for the levelling of this filling.

In doing this work, some 188,725 cubic yards of other materials were removed, of which 43,808 cubic yards were overcast. The material dredged from other portions of the harbour were also used for filling at the rear of the revetment wall, being dumped from the scows in front of the wall and overcast by a clam shell dredge at the expense of the city of Hamilton.

Total expenditure for fiscal year 1908-9, \$31,313.01.

## HAWKESTONE.

Hawkestone, Simcoe county, is situated on the north shore of Lake Simcoe, 14 miles east of Barrie. Population, 600.

On November 11, 1907, authority was given to expend by day labour the sum of \$600 in repairs to the wharf at this place, and, on May 14, 1908, an additional sum of \$150 was authorized to complete the work.

Work was commenced April 1 and completed October 31; it consisted in replanking the whole of the deck and placing some twenty new stringers and a new waling, placing stone filling in the cribs and repairing the stone and gravel approach.

Total expenditure for fiscal year, 1908-9, \$768.72.

## HEAD RIVER.

Head River, Victoria county, takes its rise in Mud lake and flows northerly through the township of Dalton and discharges into Black river, in the township of Rama, lot 8, concession 'H.'

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At the last session of parliament, the sum of \$2,850 was appropriated for improvements on this river, and on August 8, 1908, authority was given to proceed with the work by day labour.

The work consisted in the removal of obstructions from a tributary of the Head river, also the removal of rock and boulders from the Head river at Twin rapids, McDonald's rapids and the Natural dam, to enlarge the channel and increase the flow of the water.

The work on the tributary of the Head river consisted in the excavation of a drainage canal, 4,650 feet long, to pass through and drain about six lots, viz., 16, 17 and 18, concession 'D,' and lots 18, 19 and 20, concession 'E,' township of Rama. Dimensions of drain, as constructed, are: 8 feet wide on top and 3 feet deep at junction with Head river, from whence it gradually diminished in width and depth to a point 4,000 feet back from the river, where it is 5 feet wide at the top and 2 feet deep. Some 1,500 cubic yards of earth have been excavated by means of horse scrapers and shovels. This work begun October 23 and completed December 30.

The work on the Head river proper was commenced November 24, completed March 24, and consisted in the removal of 921 cubic yards of rock, of which 448 yards were removed from Twin rapids, 375 yards from McDonald's rapids and 98 yards from the Natural dam, also the removal of a number of boulders.

Total expenditure for the fiscal year, 1908-9, \$2,848.40.

#### HILTON.

Hilton, district of Algoma, is a small village situated on St. Joseph island, on the north channel of the Georgian Bay.

At the last session of parliament, the sum of \$2,000 was appropriated for repairs to wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 23 and completed October 31, and consisted in the removal of the superstructure of cribs to low water level, the building thereon of concrete walls and filling in the space between the walls to the height of the old wharf which the new work adjoins. The concrete wall is 30 inches thick by 360 feet long; being 200 feet along outer face, 30 feet wide at each end and 100 feet long inner face; a portion of the approach has also been planked for 71 feet by 12 feet, and 75 feet by 35 feet on the north side of the wharf.

Total expenditure for fiscal year, 1908-9, \$1,691.09.

#### HONORA.

Honora is a village on the east shore of Manitoulin island, district of Algoma, and is distant about 20 miles from Little Current. Population, 50.

At the last session of parliament the sum of \$2,800 was appropriated for an addition to the wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 16 and completed December 31; it consisted in the construction of a driveway around the warehouse on the government wharf, 20 feet of which is 20 feet wide and 64 feet 9 inches is 16 feet wide, placed on four cribs; This portion is connected with the original wharf by a driveway 16 feet by 20 feet, which is splayed at corners joining the wharf.

Total expenditure for fiscal year, 1908-9, \$2,591.98.

#### JEANNETTE'S CREEK.

Jeannette's Creek wharf is located on the south bank of River Thames, opposite Jeanette's creek, in the county of Kent, about 4 miles from the mouth of the River



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Thames. It was constructed in 1906, for the purpose of serving the surrounding prosperous farming district, and to enable them to ship their produce, by water, and to bring in coal, lumber and other materials.

On August 10, 1908, authority was received to expend the sum of \$200 by day labour, in levelling up the filling in rear of dock, as also for the providing of 30 feet sheet piling protection work at up-stream end of dock. Work was performed between January 2 and February 19, 1909.

Total expenditure during fiscal year, \$125.

## JUNIPER ISLAND.

Juniper island, Peterborough county, is situated in Stoney lake; it is the centre for the distribution of supplies for tourists and cottagers using Stoney lake as a summer resort.

At the last session of parliament, the sum of \$1,500 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced August 28; but only a small amount of the materials were ordered when the work was transferred to the control of the Department of Railways and Canals.

Total expenditure for fiscal year 1908-9, \$29.20.

## KEARNEY.

Kearney, district of Parry Sound, is a village on the Magnetawan river, 7 miles east of Scotia Junction, on the Grand Trunk Railway from Parry Sound to Ottawa. Population, 550. It is quite a lumbering and manufacturing centre.

At the last session of parliament, the sum of \$1,000 was appropriated for the extension of the wharf on Loon lake, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced on October 5 and completed November 25, and consisted in the repairing, from extreme low water up, 114 feet of the breast wall of which the wharf built last year is a continuation.

Total expenditure for fiscal year 1908-9, \$482.27.

## KINCARDINE.

Kincardine is a prosperous town, situated on the east shore of Lake Huron, in the county of Bruce, 39 miles south of Southampton and 32 miles north of Goderich. It is the terminus of the Wellington, Grey and Bruce division of the Grand Trunk Railway. Population about 3,000. It is the principal summer resort on the east shore of Lake Huron.

At the last session of parliament, \$4,200 was appropriated for repairs to piers and dredging, at this point, and on April 13, 1908, authority was received to expend, by day labour, \$800 in performing urgent repairs required to the north pier. On August 13 following, authority was received to expend, by day labour, the total grant of \$4,200 while later, on August 14, authority was received to expend an additional \$200, over and above the appropriation, for the purpose of completing the repairs to the north pier.

Repairs to piers were commenced on April 23, and were completed on October 10, 1908, and consisted in the removal of 23 feet of sheet piling towards outer end and on inner face of north pier, which had become loosened; the renewal of a considerable portion of decking and waling of this pier, as also the renewal of a portion of the decking and waling of the south pier.

Total expenditure between April 1, 1908, and March 31, 1909, \$4,390.33.

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## KINGSVILLE.

Kingsville is a thriving town, situated on the north shore of Lake Erie, in the county of Essex, about 25 miles east of the mouth of the Detroit river, and on the line of the Père Marquette Railroad. An electric railway line between Windsor and Leamington, also runs through this place. Population about 1,800. It is the centre of a very rich farming country, an important harbour of refuge, and is the principal point from which the steamers, carrying freight and passengers, run regularly to Pelee Island, Sandusky and Windsor.

At the last session of parliament, the sum of \$1,000 was appropriated for repairs and renewals required to easterly pier, and, on August 10, 1908, authority was received to expend the amount by day labour.

It was found that the work could not be judiciously performed until after the closing of navigation, and operations were, therefore, postponed until March 1, when they were commenced and were completed on March 31, 1909.

The work performed consisted of the double-decking, with 3-inch plank, along a length of 481 feet of the easterly pier, of a strip on each side of centre of driveway; another strip, 23 feet wide, for a length of 64 feet, together with a block 180 feet by 13 feet 8 inches were redecked with 3-inch planking; in addition, a few floor stringers were repaired, and other minor general repairs made to the pier.

Total expenditure during the fiscal year 1908-9, was \$991.48.

## LAKEFIELD.

Lakefield, Peterborough county, is prettily situated on the Otonabee river, and on the Trent Valley canal, 10 miles north of Peterborough. It is a very popular summer resort and the terminus of the Grand Trunk Railway. A line of steamers sail therefrom to Stoney Lake, and, last year, 27,000 people passed through this place to the Kawartha lakes. The Lakefield Cement Company have their large works here. Population, 1,500.

At the last session of parliament, the sum of \$4,050 was appropriated for the construction of superstructure on the old wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Previous to the work being commenced, it was transferred to the control of the Department of Railways and Canals.

At the last session of parliament, the sum of \$5,000 was appropriated for the construction of a concrete wharf on the Otonabee river, below Block road, at this place, also the dredging of an approach to same, and on August 14, 1908, instructions were given to prepare contract plans and specifications for same.

This work was also transferred to the control of the Department of Railways and Canals.

## LAKE NIPISSING.

In the spring of 1908, the level of Lake Nipissing was abnormally high, and so remained through the summer, causing considerable damage to farm-lands on the northwest shore of the lake.

This exceptionally protracted high water was attributed to the construction of dams at the head of French river. An examination of the dams and of the flooded lands was made.

The dams were examined and found to reduce the section of discharge to a considerable extent, resulting in retarding the flow of the freshets.

From data obtained at the Georgian Bay Canal office, it was found that in the spring of 1908, the lake, with an elevation of two feet higher than at the same date in 1907, had 25 per cent less capacity of discharge.

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It was recommended that the system of dams be altered and that the outlets be so widened as to allow the surplus water, during the freshets, to find an unobstructed passage.

The estimated cost of this work was placed at \$10,000.

The examination of the lands, for which damages were claimed, was made in the townships of Springer, Caldwell, Macpherson and Loudon.

It was found that there were 104.5 acres of improved land affected. The damages on these 104.5 acres was placed at \$868. As to the unimproved lands, which were flooded through most of the summer, there are about 1,600 acres. The value of this land is placed at \$6 per acre.

## LEAMINGTON.

Leamington is a prosperous town, situated on the north shore of Lake Erie, in the county of Essex, about 37 miles from the city of Windsor, on the lines of the Père Marquette and Michigan Central Railways. Population about 1,800. It is the centre of a thriving farming district. A large number of oil wells are being worked in the vicinity of Leamington.

Between April 1 and 10, 1908, repairs, which were in progress during the previous fiscal year, were completed.

On August 20, 1908, authority was received to expend the sum of \$600 by day labour, in renewing a portion of the flooring and performing other minor repairs required to the pier.

Operations were commenced on September 15, and Completed on November 24, 1908.

At the last session of parliament, the sum of \$1,200 was appropriated for the construction of groynes to protect the banks to the east of the wharf from erosion, and, on August 10, 1908, authority was received to proceed with the work, by day labour. Operations were commenced on January 7, and were completed on March 12, 1909; and consisted in the construction of three groynes, each 40 feet long, 10 feet wide and 5 feet high, built of close-faced cribwork and filled with stone ballast.

Two coats of carbolineum avenarius were applied to the timber work.

Total expenditure during fiscal year 1908-9, \$1,919.81.

## LIONS HEAD.

Lions Head, Bruce county, is a village of 600 inhabitants, situated on the west shore of the Georgian Bay, township of Eastnor, 22 miles north of Wiarton. There is a large saw-mill in active operation here and the output of lumber is considerable.

On December 6, 1907, a contract was awarded, in the sum of \$6,990 for the construction of an extension to the wharf at this place.

Work was commenced February 10, 1908, completed May 30, and consisted in the construction of a block of cribwork, 100 feet long by 25 feet wide, at the outer end of the existing wharf, as a continuation thereof.

On January 25, 1909, authority was given to enter into an agreement with the contractors to construct a further extension to the wharf of 65 feet by 25 feet of cribwork for the sum of \$4,800, which is a pro rata price of their former contract.

This work was commenced March 1 and is still in progress.

Total expenditure for fiscal year 1908-9, \$6,431.

## MASSEY.

Massey, district of Algoma, is situated on the west bank of the Spanish river; it is an important town on the main line of the Canadian Pacific Railway from Sudbury to Sault Ste. Marie, and lies in a rich agricultural and mining district. Population, 1,800.

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At the last session of parliament, the sum of \$2,000 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 1 and completed November 20; it consisted in the construction of a pile and cribwork wharf, 62 feet in length by 40 feet in width, connected with the shore by a stone approach, 42 feet long and 22 feet wide on top. The grade on the hill approaching the wharf was considerably reduced.

Total expenditure for fiscal year 1908-9, \$1,962.19.

#### MCGREGOR'S CREEK.

On December 4, 1907, a contract was awarded for the construction of about 153 feet of close sheet-piling retaining wall, on south side of McGregor's creek, in the sum of \$2,065.50, or at the rate of \$13.50 per running foot. Work was started on September 22, 1908, and later on it was found necessary to extend the work for a distance of approximately 300 feet. On January 22, 1909, the sheet-piling was completed, a total of 456 lineal feet of close-face timber sheet-piling having been driven.

The total expenditure for the fiscal year was \$9,942.11.

#### MEAFORD.

Meaford, Grey county, is an incorporated town situated on the west side of Georgian Bay, 21 miles west of Collingwood and 20 miles east of Owen Sound. It is the terminus of the northern division of the Grand Trunk Railway. Population, 2,500. There is a large grain elevator with a capacity of 750,000 bushels.

On January 21, 1908, a contract, in the sum of \$34,742.87 was awarded for harbour improvements.

Work was commenced May 4, completed September 30 and consisted in the construction of an extension to the breakwater easterly, 60 feet in length by 35 feet in width, of cribwork substructure with concrete superstructure; the removal of 60 feet of the 'L' on old westerly pier; the construction of 300 feet of tongued and grooved piling with iron main piles, 10 feet centres, forming a solid substructure for the concrete superstructure, firmly anchored to steel piles surrounded by concrete (anchor rods were also embedded in concrete), and the construction of 133 feet of tongued and grooved wooden piling.

Total expenditure for fiscal year 1908-9, \$34,829.87.

#### MONETVILLE.

Monetville, Nipissing district, is the centre of a prosperous farming region, on the west arm of Lake Nipissing. The village is located on Shanty lake, 4 miles beyond the head of Lake Nipissing navigation.

Parliament, at its sessions of 1908 and 1909, granted \$5,000 towards extending lake navigation to Monetville.

Work commenced October 19 and was discontinued March 10. The work consists in making a rock cut, 275 feet long, 20 feet wide between Lake Nipissing and Shanty lake, and deepening a second rock cut in Shanty lake 100 feet long and 20 feet wide, so as to provide for 6-foot navigation from Lake Nipissing. When discontinued, the status of the work was as follows: The main rock cut was completed to within 2 or 3 feet of grade; the cofferdams, at either end, were completed, and the timber for the cofferdams, in the second cut, had been bought.

Expenditure in 1908-9, \$4,617.66.

#### NEPIGON.

Dredging a channel through the bar, at the mouth of the Nepigon river, 1,690 feet in length and 200 feet in width, was commenced September 6 under contract with

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the Great Lakes Dredging Company, and work was suspended for the season on December 5. During that period, 238,826 cubic yards were removed at the rate of 45 cents per cubic yard. Making total expenditure including inspection, &c., \$107,-659.45.

## NIGGER AND TELEGRAPH ISLANDS.

Telegraph island is situated in the Bay of Quinte about  $13\frac{1}{2}$  miles east of Belleville. It is a small rock island on which a lighthouse is located. The channel is immediately to the north of the lighthouse, and is comparatively narrow with a rocky bottom.

Nigger island is also situated in the Bay of Quinte about  $6\frac{1}{2}$  miles west of Belleville. A lighthouse is located about 1,000 feet southwest of the islands and the channel is immediately south of the lighthouse and is narrow and crooked with a rocky bottom. There is a shoal spot a short distance west from the island which mariners claim is an obstruction to navigation.

On May 23, 1908, authority was given to perform certain dredging at this place for which a contract was awarded to R. Weddell at the following prices per cubic yard, scow measurement, boulders \$3, all other materials 95 cents; bucket measurement, boulders, \$2.50; all other materials, 65 cents.

Drilling has been commenced over the area to be dredged at Telegraph island, but as yet, no dredging has been performed. Approximately, one-third of the proposed dredging has been drilled.

The proposed channel at Telegraph island is 1,100 feet long by 100 feet wide to be dredged to 15 feet below low water. At Nigger island, a rocky shoal, some 1,000 feet west of the lighthouse, containing, approximately, 1,100 cubic yards in situ, is to be removed, also a rocky point immediately south of the lighthouse some 700 feet long with an average width of 125 feet containing some 2,400 cubic yards, in situ. Up to the present, no work has been done at Nigger island.

Up to date there has been no expenditure.

## NIPISSING VILLAGE.

Nipissing village, district of Nipissing, is situated on South river, some 12 miles from Powassan on the Grand Trunk Railway and 20 miles from Callendar, by water, and has a population of 250, which will increase as three saw mills have recently begun operations; the Nipissing Power Company are starting construction and will transmit 3,000 horse power to North Bay.

At the last session of parliament, the sum of \$1,000 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 10 and completed October 31, it consisted in the construction of a pile wharf, 70 feet on outer side and 66 feet on the shore side, with a width of 20 feet and an approach graded thereto.

Total expenditure for fiscal year 1908-9, \$877.51.

## NORTH BAY.

North Bay, Nipissing district, is an important railroad centre, on the north shore of Lake Nipissing.

At its session of 1908, parliament granted \$400 for repairs and improvements to the public wharf, built in 1899.

The work was as follows: the headblock, for a distance of over 100 feet, was covered at the sides with 3-inch tamarack plank on inch sills; the original 4-inch flooring being repaired. The mooring posts, which had become rotted, were trimmed down and mooring hooks on wrought iron plates were attached to the ringed posts. Some

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rip-rap was placed around the loose posts. The shore end of the approach was regraded and protected with a rip-rap wall to prevent scouring at a vulnerable point.

Expenditure in 1908-9, \$268.24.

## OAKVILLE.

Oakville, Halton county, is situated on the north shore of Lake Ontario, 29 miles west of Toronto. Population, 1,800. It contains several mills, factories and a ship-yard. The trade of the place is local. It is a station on the Hamilton branch of the Grand Trunk Railway.

On May 30, 1908, authority was given to expend by day labour the sum of \$510 in repairs to the north pier.

Work was commenced September 18 and completed October 28; it consisted in levelling up the northeast corner of the 'L' on the south end of the north pier, also replanking same where required.

Total expenditure for fiscal year 1908-9, \$510.

## ORILLIA.

Orillia, Simcoe county, is situated on the west shore of Lake Couchiching, 89 miles northwest of Peterborough and 23 miles northeast of Barrie. Population, 6,000.

On June 23, 1908, authority was given to expend the sum of \$40 in painting shelter and waling on the government wharf at this place, by day labour; this having been done, the life chains were fastened to the waling with new bolts.

The stone approach to the wharf which had been damaged by severe storms was also repaired.

Total expenditure for fiscal year 1908-9, \$50.

## OSHAWA.

Oshawa, Ontario county, is a town of some 5,000 inhabitants, situated on the north shore of Lake Ontario, on the main line of the G.T.R., 34 miles east of Toronto.

On May 30, 1908, authority was given to expend the sum of \$150 in repairs to the wharf at this place; on August 8, a further expenditure of \$600 was authorized in repairs to the pier and coal sheds to be done by day labour.

Work was commenced June 1 and completed November 30; it consisted in general repairs to the piers and the coal sheds such as replanking piers, where necessary, and repairing the tramway and reshingling the sheds.

Total expenditure for fiscal year 1908-9, \$745.44.

## OTONABEE RIVER.

Otonabee river, Peterborough county, is an important waterway flowing through the town of Peterborough, emptying into Rice Lake, and connecting same with Stoney lake.

At the last session of parliament, the sum of \$5,000 was appropriated for wharf construction and repairs and, on August 8, 1908, authority was given to proceed with the work by day labour.

The work was commenced September 19 and suspended March 31; it consisted in the construction of a revetment wall or landing pier at the foot of Wolfe street, Peterborough, 288 feet in length in which there is a jog of 8 feet, 68 feet from the southerly end thereof, also return at right angles to above 38 feet in length, 20 feet of the surface of which is 18 inches lower than the surface of the revetment wall proper, and which is to be used as a small boat landing.

On November 20 last, authority was given to expend the sum of \$300 in repairs to the west end of old Rogers dam, across the Otonabee river, to fill in a breach caused

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by a freshet and prevent material and debris from being carried into the dredged channel.

Work was commenced December 11, and completed January 12.

Total expenditure for fiscal year 1908-9, \$4,999.33.

## PARRY SOUND.

Parry Sound, district of Parry Sound, is situated on the east shore of Georgian bay. Population, 3,000. The chief trade is in lumber. It is also a very popular summer resort, and is on the G.T.R., C.N.R. and C. P. Railways.

At the last session of parliament, the sum of \$5,000 was appropriated for the extension of the wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced October 14 and completed January 30; it consisted in the construction of a pile extension to the existing structure, 150 feet by 30 feet.

Total expenditure for fiscal year 1908-9, \$4,114.57.

## PELEE ISLAND.

Pelee island is situated on the western end of Lake Erie, about 35 miles south-east from the mouth of the Detroit river, and 16 miles south of the town of Kingsville, Essex county. Population of the island is about 650. The products of the island are grapes, wine, fruit and farm produce. The soil is particularly rich and fertile.

During the fiscal year 1907-8, the north dock, with its approach, was purchased by the Crown from the Scudder estate.

At the last session of parliament, the sum of \$5,000 was appropriated for the completion of repairs and renewals required to this dock, and, on August 10, 1908, authority was received to proceed with the work by day labour.

Operations were commenced on November 2, completed on March 31, 1909, and consisted in renewing face-timbers, from low water level to height of 4 feet 2 inches above same, of 60 feet of approach to dock, decking of the four inner bays of dock, each bay being 22 feet long; 6 upper tiers of face-timbers of outer block were renewed and iron corner plates placed, together with the greater portion of stringers and flooring on this part of the dock; the floor sills on which warehouse rests were renewed, as also the lower three feet of the walls of the building; 16 new mooring posts were securely built in dock; stone filling renewed in various places, and other general repairs were made.

Total expenditure for last fiscal year, \$4,691.16.

## PETEWAWA.

Petewawa, North Renfrew county, is on the south shore of the Ottawa, above Pembroke. In 1905, the department built a pilework wharf at this place, some 1,600 feet below the mouth of the Petewawa. Logging operations have been carried on for years past at this point. Owing to the formation of a sand bar, blocking the log channel immediately below the wharf, it became necessary to either move out the head of wharf or restore the channel. The latter plan was adopted and a channel, 65 feet wide, 215 feet long and 2 feet 4 inches deep, was made with drag scrapers and teams. Some 1,200 cubic yards of sand were removed, from August 10 to September 7, at a cost of \$300.

## PIKE CREEK.

Pike Creek is a village, in the county of Essex, on the south shore of Lake St. Clair, and is situated on the London and Windsor division of the Grand Trunk Rail-

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way. It is 10 miles east of the city of Windsor. Population, 250; principal industry is farming, although considerable fishing is done at the creek.

On November 31, 1908, authority was received to expend the sum of \$200, by day labour, in performing necessary repairs to sheet piling at entrance to the creek. Operations were commenced on December 1, and were continued as steadily as the weather and condition of the ice would permit, until February 27, when work was completed.

The work performed consisted of the withdrawal of 75 feet of the outer end of the sheet-piling on easterly side of entrance and the driving of same in a more easterly direction, in order to provide for the utilizing of the deeper water at entrance to creek.

Total expenditure during fiscal year 1908-9, \$197.20.

#### PORT ARTHUR.

Port Arthur is situated on the Kaministiquia river, about 1 mile from its discharge into Thunder bay, at the head of Lake Superior, 750 miles from Collingwood.

#### *Dredging.*

The contractor resumed dredging in the harbour on May 9, and completed his contract on July 4. During that period 38,186 cubic yards were removed, at a cost of 94c. per cubic yard.

The total expenditure amounted to \$3,727.67.

#### *Breakwater.*

During the last fiscal year, Contractor M. J. Hogan commenced framing cribs for the new breakwater on April 14.

The first crib was sunk on July 4, and the first 1,000 feet of breakwater, which was constructed of timber, was completed on October 24. In addition, five cribs of the permanent work were sunk in place, and 13 other cribs are in different stages of completion.

Work closed down for the season on the December 3, 1908, and was again resumed on March 22 last to enable the contractor to build the headblock on the ice.

#### PORT BURWELL.

Port Burwell lies on the north shore of Lake Erie, about 90 miles above Port Colborne.

During the last fiscal year, dredging was done at the entrance of the harbour; all cuts were made 25 feet wide, and to an average depth not less than 20 feet. Other cuts were made in inner harbour to a depth of nineteen feet.

The total quantity of cubic yards removed was 41,844 and the expenditure amounted to \$17,370.13.

#### PORT COLBORNE.

During the fiscal year 1908-9, the work done at Port Colborne consisted in depositing along the lake side of the western breakwater, 6,000 cubic yards concrete blocks, 15, 10 and 5 tons in weight, which had been made during the preceeding year.

These blocks form an excellent protection for the breakwater, which is now in good condition. It is, however, only a question of a year or two, when the whole of the superstructure, which was unfortunately built of wood, must be replaced by one of concrete, at an estimated cost of \$250,000.

The work done in 1908-9 was satisfactorily performed by Mr. M. J. Hogan; the total expenditure being \$12,079.03.



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## PORT HOPE.

Port Hope, Durham county, is situated on the north shore of Lake Ontario, 60 miles east of Toronto, on the Grand Trunk Railway. The chief trade is in lumber and grain. It has a number of important industries. Population, 5,000.

At the last session of parliament, the sum of \$15,000 was appropriated for repairs to piers and dredging at this place, and, on August 14, 1908, instructions were given to prepare contract plans and specifications for same.

These have been duly prepared and forwarded to Ottawa.

The work consists in placing a concrete superstructure on the westerly breakwater, 310 feet in length by 20 feet in width, also repairing the easterly pier, 335 feet in length by 18 feet in width.

On November 19, 1907, a contract was awarded to W. E. Phin, of Welland, to perform certain dredging at the following prices per cubic yard, scow measurement, rock, \$2.40; all other materials, 22 cents.

The work was commenced October 15 and closed for the season November 30 and consisted in dredging in the harbour and approaches thereto to a depth of 12 feet below low water.

The dredge removed 52,274 cubic yards of other materials.

Total expenditure for fiscal years 1908-9:—

To paid, W. E. Phin. . . . .	\$11,500 28
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	\$11,631 58

## PORT ROWAN.

Port Rowan, Norfolk county, is on the north shore of Lake Erie, in the inner bay of Long point, and is 21 miles from the town of Simcoe. Population about 1,000.

On August 10, 1908, authority was received to expend, by day labour, the sum of \$500 for renewals and repairs to wharf at this point. This grant was subsequently increased by \$200 in order to provide extra stringers.

Work was commenced on September 3 and completed on November 10, 1908, and consisted in the renewal of a large portion of the decking of the wharf, including new stringers across the open bays, and the renewal of a few face timbers.

Two coats of carbolineum avenarius were applied to all new timber.

Total expenditure during fiscal year 1908-9, \$420.49.

## PORT STANLEY.

Port Stanley is an important harbour of refuge, situated on the north shore of Lake Erie, at the mouth of Kettle creek, in the county of Elgin,  $8\frac{1}{2}$  miles by rail, south of the city of St. Thomas and  $23\frac{1}{2}$  miles south of the city of London. It is the terminus of the Père Marquette Railway and of the South Western Traction Company Electric Railway. It is a favourite summer resort. Population about 750, which is largely increased during the summer months.

Port Stanley, a regular port-of-call for two lines of steamers carrying passengers and considerable package freight. There is a small grain elevator at this point, which, during past season, handled about 100,000 bushels.

At the last session of parliament, the sum of \$58,000 was voted for harbour improvements at this point, as also the sum of \$6,300 for the construction of groynes on the easterly side of the harbour.

On May 13, 1908, authority was received to expend the sum of \$100 in making minor urgent repairs required to piers; on June 18 following, authority was given to expend the sum of \$900 in extending the breast-work protecting approach to easterly

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pier; on September 11, authority was received to expend the sum of \$4,800 in renewing a portion of the westerly pier in inner harbour, a further amount of \$900 to complete the work in hand was supplemented on March 1, 1909, all of the above works to be performed by day labour.

Operations were commenced on May 18, and practically continued during the fiscal year. The work performed consisted in the construction of an extension, 120 feet long, to the inner end of the breakwater, protecting approach to easterly pier, as also the completion of filling of the remaining 180 feet of breastwork; minor general repairs to both piers, and the stripping and renewal of 100 feet of inner portion of westerly pier.

*Breakwater.*—On July 20, 1905, a contract was awarded for the construction of two breakwaters, each 500 feet long, at the outer entrance of this harbour, in the sum of \$105,828. It was subsequently decided to change the site first proposed for the breakwaters and to construct one breakwater, 1,000 feet long, protecting the westerly side of entrance to harbour, and the inner end of the structure to connect with the existing Père Marquette pier. This change was made in order to give complete protection from the prevailing storm winds, which are from the southwest, as also to assist in preventing the filling up of channel, at entrance to piers, by the littoral drift from the southwest. Operations were commenced on August 7, 1906, and by March 31, 1908, 400 feet of substructure, composed of close-face cribwork with stone ballast had been built and placed in position, while the remaining 600 feet of cribwork was constructed and moored in harbour. Operations were resumed on April 18, 1908 and continued until December 7, 1908, when work closed down for the winter.

The breakwater, as built to date, consists of close-face cribwork substructure, 35 feet wide, filled with stone ballast and reaching to a level of approximately one foot below low water level, and with an average height of 23 feet. A berth was provided for these cribs, the dredging of which was performed by this department. The superstructure consists of mass concrete, additional cost over and above the amount of contract being \$33,044.

On November 7, 1907, authority was received to accept the offer of contractors to supply and drive two clusters of guard-piles on southerly face of inner face of breakwater for the sum of \$1,350.

On October 28, 1908, authority was received to have 1,000 cubic yards stone talus placed around breakwater by the contractors at a price of \$3 per cubic yard, and on November 21, following, further authority was received to place an additional 400 cubic yards of this talus at the same price. On November 28, 1908, authority was also received to accept the offer of the contractors for the construction of necessary connection between the inner end of breakwater and the outer end of Père Marquette pier; work to consist of concrete side walls, having an average width of 5 feet, with stone filling between; the average length of this connection is 15 feet. Amount of contract was \$2,100.

At the end of the past fiscal year, the construction of the entire breakwater, together with the additions mentioned, were completed with the exception of the placing of a few iron plates.

*Groynes.*—On February 1, 1909, a contract was let in the sum of \$6,535, for the construction of six groynes to protect properties to the east of the harbour of Port Stanley from further erosion. The groynes will be 60 feet long, 10 feet wide and 6 feet high, reaching to 2 feet 3 inches above low water level. They will be filled with stone ballast and will be protected from erosion at the outer end by the driving of close-face sheet-piling. The work commenced on February 19, 1909, and, at the end of the fiscal year, was still in progress. Up to that date, six cribs were completed with the exception of the two top tiers of timber.

The total expenditure from April 1, 1908, to March 31, 1909, \$703.43.

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## PROVIDENCE BAY.

Providence Bay, district of Algoma, is situated on the south shore of the Manitoulin island, Lake Huron, about 12 miles northwest of Michael's bay and 30 miles by road from Manitowaning and 25 miles from Gore bay. Population 300. It has a saw mill and is a fishing station of considerable importance and is one of the principal ports on the island at which all local steamers call.

On August 1, 1908, authority was given to expend \$600 in repairs to the existing wharf by day labour. Work was commenced October 25 and completed March 4, and consisted in replacing some 40 uprights, new waling, where required, also new stringers and decking to replace that which was decayed.

Total expenditure for the fiscal year 1908-9, \$767.76.

## RICHARD'S LANDING.

Richard's Landing, district of Algoma, is a small village on the north shore of St. Joseph's island in Georgian bay, distant 9 miles by water from Desbarats, the nearest railway station. Population, 350.

At the last session of parliament, the sum of \$3,000 was appropriated for repairs to the wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour; on October 3 last, authority was also given to construct a stone and gravel approach to the wharf and leave the repairs in abeyance, however, as the approach only cost \$1,500, the remainder of the appropriation was used in making repairs to the wharf.

Work commenced October 12 and carried on to November 2, when it was suspended till January 12, 1909, and carried on to March 31; it consisted in the construction of a stone approach, 200 feet long by 20 feet wide on top, with side slopes of one on one; the top of which received a coating of gravel; the reconstruction of part of the crib-work superstructure, from low water up, 60 feet by 90 feet, at the west end, also the construction of two cribs, 12 feet square, and 4 cribs, 14 feet square; all to a height of 3 feet. The face of wharf, 90 feet long, was repaired with 12-inch by 12-inch square timber. A row of piling was driven the full length of wharf, 145 feet, at 5 feet centres capped with 10-inch by 12-inch timber. The east end of the wharf was also repaired and all cribs were filled with stone.

Total expenditure for fiscal year 1908-9, \$3,000.

## ROBIN'S LANDING.

Robin's Landing, Northumberland county, is situated on the north shore of Rice lake. The wharf is used for the shipment of farm produce, &c.

On June 23, 1908, authority was given to expend the sum of \$100 in repairs to the wharf by day labour.

The work consisted in widening the approach to the wharf and putting new rip-rap along the sides, 35 feet in length by 5 feet in height, composed of large stones.

Total expenditure for fiscal year 1908-9, \$95.33.

## ROCHE'S POINT.

Roche's Point, York county, is a small summer resort on the west shore of Cook's bay, an arm on Lake Simcoe. Population, 150.

On March 28 last, authority was given to expend the sum of \$500 for the completion of the wharf at this place by day labour.

There was also an expenditure of \$14 for labour towards the completion of this wharf.

Total expenditure for fiscal year 1908-9, \$514.

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## RONDEAU.

Rondeau is an important harbour of refuge and port of entry, situated on Pointe Aux Pins, about 19 miles south of the city of Chatham and 45 miles west of Port Stanley. It is a favourite summer resort and the terminus of the Sarnia and Rondeau branch of the Père Marquette Railway. Population about 100.

In the inner harbour, and at westerly side along coal dock, a modern and extensive coal handling plant is used by the Lake Erie Coal Company, for unloading coal from their boat, which runs regularly between this point and Conneaut, Ohio.

On September 17, 1908, authority was received to expend the sum of \$400 by day labour, in performance of repairs to piers, for which timber and iron on hand could be utilized. Work was commenced on September 22, and was completed on March 31, 1909. It consisted in repairing damage which had occurred to outer end of eastern pier; in renewing a small portion of the flooring on this pier; in making general repairs to the west pier, and repairing roof and walls of government tool-house.

On July 17, 1908, the westerly pier was damaged by the coal boat *M. & B. No. 1* colliding with the pier, and, in accordance with instructions received, this damage was repaired during the months of August and September, and the cost of same, amounting to \$212.34, was settled for by the Bessemer Dock and Navigation Company, Limited.

On March 26, 1909, a contract was awarded for an extension of 1,000 feet to westerly pier; contract price \$229,000. The proposed structure is to be constructed of close-face timber cribwork substructure, 35 feet wide at bottom and 30 feet at top, filled with stone ballast and reaching to one foot below L.W.L.; superstructure is to be of mass concrete, reaching to a height of 8 feet above L.W.L.

Operations were commenced on February 22, 1909, and were in progress at the end of the fiscal year. Up to that date, a large amount of material was stored on the site of the work.

It is expected the construction of this work will eliminate the present difficulty encountered in maintaining a proper depth of water at the outer entrance to this harbour, owing to the continual filling-in which occurs from the southwesterly or storm direction.

Total expenditure during last fiscal year, including dredging, \$36,415.01.

## ROSSEAU.

Rosseau, District of Muskoka, is a summer resort at the northerly end of Lake Rosseau, and is very popular and largely patronized by tourists.

On August 18, 1908, authority was given to expend the sum of \$200 for the completion of the wharf at this place by day labour.

Work was commenced September 28, completed October 22, and consisted in planking portions of wharf, also replacing a number of decayed stringers, and reshingling a portion of one of the sheds.

Total expenditure for fiscal year 1908-9, \$329.19.

## ROSSPORT.

Rosspport, Thunder Bay district, is a village of 200 inhabitants on the main line of the Canadian Pacific Railway, 14 miles west of Schreiber, on the north shore of Lake Superior. It has a fine natural harbour. The chief industry is fishing.

On February 6, 1908, a contract for the construction of a wharf was awarded in the sum of \$7,288.

Work was commenced May 7, completed August 17, and consisted in the construction of a wharf with stone approach, 170 feet by 20 feet wide on top, extending

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from the shore to the cribwork, which is 76 feet long by 20 feet wide, and at the outer end of which there is an 'L' 60 feet long by 20 feet wide. Some 40 feet additional length of approach was added to make the grade easier from the wharf to the rising ground in rear.

Total expenditure for fiscal year 1908-9, \$7,747.50.

## ST. JOSEPH.

St. Joseph is situated on the easterly shore of Lake Huron, in the county of Huron, about 14 miles south of Goderich. Population about 50.

On February 20, 1908, authority was received to expend by day labour, the sum of \$300 in completing the approach to wharf at this point. On March 31, 1908, the work had not been completed. Operations were resumed on April 6, and continued until May 29, 1908, when approach was completed; which left the whole work in excellent condition.

The total expenditure during the fiscal year 1908-9, was \$300.62.

## ST. LAWRENCE PAVILIONS.

There are seven pavilions which have been built by the Federal government on the islands in the St. Lawrence river:

One on St. John or Howe island, opposite Gananoque.

One on Gordon island, near Gananoque narrows light.

Two on Deer island, one on the north shore of Echo Lodge and one on the south side of Deer island.

One on Grenadier island.

One at Mallorytown landing.

One on Picnic island, near Brockville.

On May 21 last, authority was given to expend the sum of \$1,000 in repairing and painting five of the pavilions by day labour.

Work was commenced July 20 and completed October 24, and consisted in the rebuilding of one of the pavilions from the floor upwards; four others required repairs such as new posts, foundation sills, flooring, railing, &c. All of the five were painted and braced with iron rods connecting the buildings with iron bolts sunk in the rock.

Total expenditure for fiscal year 1908-9, \$875.19.

## SAND POINT.

Sand Point, in the county of South Renfrew, is located on the south shore of Chats lake, an expansion of the Ottawa river. It is a transfer point for the traffic taken across to Norway Bay.

At its session of 1908, parliament appropriated \$6,800 towards the completion of a concrete masonry wharf, at this place. The wharf was commenced on February 21, and completed September 25.

The structure consists of a landing head, 50 by 68 feet, and an approach, 232 feet long, built of dry masonry walls battering 1 on 2 and 14 feet wide on top for a distance of 147 feet, and, further, of similar walls, battering 1 on 4, 18 feet wide on top, with 12-inch concrete veneer above low water level, placed on light cribwork under-structure; a backfilling of quarry refuse and gravel topped with road metal at a height of 8½ feet; a one-story umbrella roof freight shed and shelter 10 by 18 feet, and a two-line wrought iron pipe railing on the narrow portion of the approach.

Expenditure in 1908-9, \$4,676.61.

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## SAUGEEN RIVER.

Saugeen river empties into Lake Huron, at a point about 32 miles from Walkerton and about 43 miles from Sarnia. At the mouth of the river, is situated the thriving town of Southampton.

On December 3, 1908, authority was received to expend the sum of \$20 on slight repairs required to easterly pier. The work was performed between the 22nd and 24th December, 1908, and consisted in the renewal of a portion of stone filling which had been washed out of this pier.

## SAULT STE. MARIE.

Sault Ste. Marie, district of Algoma, is situated at the head of St. Mary's river, which connects Lake Superior with Lake Huron. Population, 10,500. It is on the main commercial route from the Great West to the seaboard. The tonnage passing through the Soo canals, during 1907, amounted to 58,217,214 tons.

On May 21, 1908, authority was given to expend the sum of \$675 in replanking the approach to the wharf by day labour. Work was commenced June 9 and completed June 18.

On July 7, authority was given to expend the sum of \$75 in repairs to office in old warehouse for the use of the customs officers.

Work was commenced 22nd and completed 28th July. It was found necessary to protect the angles of the wharf with iron plates and to repair the waterworks in office of warehouse, which had been damaged by frost.

Total expenditure for fiscal year 1908-9, \$877.84.

## SEAGULL.

Seagull, or Sailor's Encampment, District of Algoma, is situated on the south-west shore of St. Joseph's island, in St. Mary's river, about 4 miles from Richard's Landing. It is a farming community and very well settled. This place, formerly, was a very well-known point, as it was the head of navigation for sailing craft, being just opposite Neebish rapids.

At the last session of parliament, the sum of \$2,000 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced October 9, completed March 27. It consisted in the construction of a wharf of cribs and spaces, 58 feet long by 18 feet wide, of a stone approach, 100 feet by 18 feet wide on top, with side slopes of 1½ on 1. The cribs are spaced 18 feet apart.

Total expenditure for fiscal year 1908-9, \$1,735.54.

## SEVERN RIVER.

Severn river, Ontario county, flows from the northerly extremity of Lake Couchiching to the Georgian bay.

The municipal council of Orillia have consented, by resolution of council, to place stop logs in their concrete dam at Ragged rapids on this river in order to raise the water 8 or 9 feet, which should drown out the rapids at McDonald's chute, and the council have assumed liability for land damages as far as McDonald's chute. Authority was given, on October 15 last, to have these stop-logs placed in this dam for this purpose.

Authority was given to have the wooden sills in the two stop log dams on this river, at Washago, removed and replaced by iron braces.

Work was commenced September 15 and completed November 3.

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The work consisted in the removal of the sills and the strengthening of the dams by iron braces forged to fit the spaces and bottom of the river; vertical slash boards were also inserted in each spillway to prevent leakage at low water.

On account of the arrangement made with the municipal council of Orillia, the construction of the dam at McDonald's chute was rendered unnecessary, and the amount appropriated for that purpose was divided into three sums of \$500, \$800 and \$1,300, to be spent at Bennett's, McDonald's chute and Ragged rapids, respectively.

The work at Bennett's consisted in the removal of a rocky shoal containing some 100 cubic yards, making the channel 30 feet wide and 4 feet deep, at low water, and 45 feet long.

The work at McDonald's chute and Ragged rapids consisted in the widening and deepening of the channel by the removal of a point of rock that retarded the flow of water considerably, and in removing from the river the debris left after the construction of the temporary dam at the head of the rapids, which was considered a serious obstacle to the flow of the river.

Total expenditure for fiscal year 1908-9, \$431.87.

## SHEGUINDAH.

Sheguindah, District of Algoma, is situated on the north shore of Manitoulin island, at the entrance to Haywood sound, and at the west end of Sheguindah bay. The village is 6 miles south of Little Current and 16 miles north of Manitowaning.

On March 17, 1908, authority was given to expend the sum of \$500 in repairs to the wharf at this place, by day labour.

Work was commenced April 1, completed July 23, and consisted in replacing nearly all the decking, also, providing new sills.

Total expenditure for fiscal year 1908-9, \$498.48.

## SHREWSBURY.

Shrewsbury is a small village on the north shore of Rondeau bay, in the county of Kent, 20 miles southeast of Chatham, and 5 miles south of Blenheim; it is the centre of a farming district. Population about 50.

On July 13, 1908, authority was received to expend the sum of \$20 by day labour, in repairing damage done by erosion, to the approach to dock at this point. Work was performed during the latter part of July, 1908.

Total expenditure at this point during the fiscal year 1908-9, was \$17.40.

## SILVER CENTRE.

Silver Centre, on the west shore of Lake Timiskaming, 22 miles south of Haileybury, in the district of Nipissing, is the landing for a heavy traffic developed during the past season, on account of the establishment of mines in the vicinity.

The sum of \$4,000 having been granted by parliament towards the construction of a wharf, an examination was made and it was decided to build the pilework head with the present appropriation, if possible, with a view of completing the structure early in 1909.

Accordingly, the structure was designed and work started September 15, 1908, with the Blanche river plant just completed for dredging and converted into a pile driver. Pile driving was completed September 30 and work was discontinued at the end of November.

Work was resumed March 16 and landing head was nearing completion at the end of the fiscal year.

The landing head, 65 by 92½ feet, is 360 feet from shore, drawing 10 feet and built to elevation 13 feet. It is protected on the north side by a continuous ice breaker,

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is fully braced, sheeted with 4-inch tamarack and fendered to a batter of 12 to 1 on all landing faces; it has three slips.

Expenditure in 1908-9, \$4,482.64.

#### SOUTHAMPTON.

Southampton is a prosperous town situated at the mouth of the Saugeen river, in the county of Bruce, on the easterly shore of Lake Huron, 32 miles from Walkerton, the county town; it is the terminus of the Grand Trunk Railway, a harbour of refuge and a port of call for steamers of the Algoma steamship line. Population about 2,000.

At the last session of parliament, the sum of \$3,500 was appropriated for repairs to Chantry island breakwater, and the sum of \$25,000 was also appropriated for an extension of 500 feet to the town dock, and renewal of the outer 100 feet of the superstructure of said dock.

A contract for work to be performed at town dock was awarded on December 6, 1907, in the sum of \$41,000. Operations were commenced on May 20 and the work was completed on December 1, 1908. The extension, together with the renewal of 100 feet of superstructure, as constructed, is 30 feet wide and reaches to 5 feet 3 inches above low water level; it consists of close face timber substructure filled with stone ballast; the superstructure is of concrete side walls, 4 feet wide at base and three feet wide at top, with stone filling between; the surface is covered with gravel. An arrangement was made with the contractors whereby concrete mooring posts were substituted for timber posts called for in the contract; the change was made without additional cost, and the whole work presents an excellent appearance.

On May 23, 1908, authority was received to expend \$175 on urgent repairs required to Chantry island breakwater, and on August 10, following, further authority was received to expend the appropriation of \$3,500 by day labour. Operations were commenced on June 1 and continued until January 23, 1909, when they ceased temporarily, owing to severe weather. Work was again resumed on the 1st and completed on March 27, 1909, and consisted in the removal of two tiers of face-timbers on the north side of the inner end of the mainland breakwater, and the renewal of face-timbers from water level up, on the south side of this portion of breakwater, together with the refilling of stone and gravel. Other general minor repairs were also made.

On the Chantry island breakwater, some 290 feet of the superstructure of the inner end was partially renewed and 418 feet of the breakwater was redecked.

The total expenditure during the fiscal year 1908-9 was \$44,737.06.

#### SOUTH NATION RIVER.

The South Nation river has an irregular course of 100 miles and flows into the Ottawa river at Wendover, Prescott county. This river with its large watershed, running as it does through flat country, overflows its banks extensively during the spring and summer freshets. In 1900-1902, one of the obstructions, the 'pitch-off,' was lowered. In March, 1908, Hagar's dam, at Plantagenet village, was purchased and removed.

At its session of 1908, parliament granted \$11,800 towards further necessary improvements to the drainage of this important water course.

The work commenced August 18 and was discontinued March 8. The boulder and hard pan shoal, opposite the cemetery, at Plantagenet, was lowered, August 18 to October 2, about 2 feet, over a length of some 400 feet and 250 to 300 feet in width. This work, to lower the grade is part of a definite scheme of drainage improvement, was done with a four horse plough, carts and drag scrapers. The large boulders were blasted. The spoil was deposited to form rip-rap walls along the banks, or widen the strip of land between the roadway and shore line.



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At the 'pitch-off,' work was in progress from August 26 to March 8. A cut was made there, through limestone, 70 to 100 feet wide, 350 to 400 feet long,  $2\frac{1}{2}$  feet deep and was completed at the end of November. Through the winter, another cut, 85 feet wide, 175 feet long,  $2\frac{1}{2}$  feet deep was made alongside the first one. This work involved the removal of some 2,460 cubic yards of solid rock to a shallow grade.

Total expenditure during last fiscal year, \$9,216.56.

## STANLEY ISLAND.

Stanley Island is in the St. Lawrence river, opposite Summerstown, in Glengarry county, some 9 miles northeast of Cornwall. It is a much frequented summer resort.

During the summer of 1907, the government decided to buy a wharf, situated opposite the Algonquin Hotel, for the sum of \$500. The structure, first built in 1880, repaired and enlarged in 1887 and 1900, consisted of : a crib and span headblock, 140 feet long and 25 feet wide; a 24 foot approach formed of a 20 foot span from headblock to a stone embankment which is 40 feet long.

Along the whole front of the headblock, there is a pile addition, 15 feet wide at downstream end and one foot wide at other end.

Repairs to and enlargement of this landing pier were begun in June, 1907, and completed with the exception of the binders, at the end of August following.

When water had lowered sufficient'y in August last, the pile binders were secured and the whole structure completed in the beginning of September.

## SYDENHAM RIVER.

Sydenham river has its outlet in Chenal Ecarté, the passage between St. Anne island and the mainland. From its mouth to Wallaceburg it is a large navigable stream, above this point it divides into two branches; north to Wilkesport, 14 miles, and east to Dresden, 15 miles. The principal traffic on this river is in lumber, fence posts and building materials, principally gravel.

On September 28, 1907, authority was received to expend, by day labour, the sum of \$600 in the removal of sunken logs and snags, which were forming obstructions in the branch of the river between Dresden and Tupperville; the work was practically only started when it became necessary to cease operations for the winter. Operations were resumed on April 23, 1908, and, on July 21 following, an additional expenditure of \$600 was authorized, in order to cover the remainder of the river to Wallaceburg. On November 23, 1908, a further expenditure of \$15 was authorized on this work, making a total in all of \$1,215.

On October 7, 1907, authority was received to expend the sum of \$500 in the removal of logs and other obstructions in the north branch of the Sydenham river, between Winters and Wilkesport. When work closed down for the season a balance of \$156.30 remained unexpended on this work. This balance together with an additional amount of \$13.85 was expended in completing the work between October 5 and 31, 1908.

The total expenditure during the fiscal year 1908-9, \$1,465.67.

## TENBY BAY.

Tenby bay, district of Algoma is a farming settlement on St. Joseph's island, Lake Huron.

On August 28 last, authority was given to expend by day labour the sum of \$400 in the construction of a freight shed on the government wharf at this place.

Work was commenced October 23 and completed November 14; it consisted in the construction of a freight shed, 16 feet by 40 feet, standing partially on the wharf and partially on small cribs erected for the purpose.

Total expenditure for fiscal year 1908-9, \$399.58.

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## THAMES RIVER—LIGHTHOUSE WHARF.

Lighthouse wharf is located at the mouth of the River Thames, and was constructed for the purpose of serving the township of Tilbury North, Tilbury West, Tilbury East and Rochester. A draught of 12 feet of water is available up to the dock.

On August 10, 1908, authority was received to expend, by day labour, the sum of \$250 in completing and levelling off the filling required in rear of this dock. The work was performed between September 3 and 30.

On July 16, 1908, authority was received to enter into agreement for the construction of an approach to this dock, material supplied to be paid for at the rate of 12½ cents per cubic yard, place measurement, and the total expenditure on the work not to exceed \$1,425. The work was commenced on July 21 and completed on September 5, 1908, and consisted of the construction of a roadway approximately 1,600 feet long and with a top width of 16 feet.

## THESSALON.

Thessalon, District of Algoma, is situated on the north shore of the north channel of Lake Huron. It is an important town containing several industries and a number of large sawmills. Large quantities of lumber are shipped from this place. It is a regular port of call for all liners. Population, 1,400.

On February 21, 1908, authority was given to remove the warehouse from the old wharf, to serve as an extension to the warehouse on the new government wharf.

Work was commenced March 2, and completed April 24.

At the last session of parliament, the sum of \$4,000 was appropriated for harbour improvements at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

The work of procuring the materials and assembling same in a safe place, as near as possible to the site of proposed work, was commenced September 28, and continued till March 31, and was for the purpose of constructing a cribwork breakwater 275 feet in length by 14 feet wide, with an average height of 9 feet, the cribs to be filled to the top with stone and covered with 6-inch timber.

Total expenditure for fiscal year 1908-9, \$2,298.90.

## TOBERMORAY.

Tobermoray harbour, Bruce county, is situated at the northwest extremity of the Saugeen peninsula, and possesses perfect shelter from all winds. It consists of the eastern and southwest arms; the latter extending from Lighthouse point, W.B.S. ½ S. 900 yards, with an average breadth of 100 yards. The low limestone shore sinks down almost perpendicularly to 7 or 8 fathoms, which depth, over soft mud, will be found all over this arm, excepting near the bottom, whence a muddy flat extends 120 yards to a depth of 18 feet.

At the last session of parliament, the sum of \$3,600 was appropriated for the construction of glance booms at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

The work consists in placing large glance booms where necessary, to protect vessels from the rocky sides of the harbour.

The materials for this work, ordered in August, was British Columbia fir, but, owing to delay in transportation, did not reach Parry Sound until too late to tow it in safety to the site of the work.

Total expenditure for fiscal year 1908-9: Materials, \$2,310.80.

## TORONTO.

Toronto, York county, is a city of some 360,000 inhabitants, situated on the north shore of Lake Ontario. The harbour is formed by a circular basin, 1½ mile

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in diameter, separated from the lake by a large island (formerly a peninsula) about 6 miles long, making a safe, well-sheltered harbour, capable of containing a large number of vessels.

On April 7, 1908, authority was given to expend the sum of \$14,000 in repairs by day labour, to the breakwater on the south shore of the island.

Work was commenced April 1, and completed August 31, and consisted in placing large stones, weighing one ton and upwards, as rip-rap, along the south face of the breakwater, for a distance of 4,000 feet; in constructing a crib, 86 feet by 12 feet to an average height of 6 feet, to repair a breach in the breakwater, and in renewing, where necessary, the temporary pile breakwater.

On May 1, authority was given to expend, by day labour, the sum of \$900 in repairing the head-block of the east pier of the eastern channel.

On May 29, 1907, instructions were given to prepare contract plans and specifications for the construction of a new western entrance to Toronto harbour, and on May 15, 1908, a contract for the construction of a new western entrance to the harbour was awarded to P. Weddell & Co., in the sum of \$495,000.

Work was commenced July 14 and continued till December 24, when it was closed for the season. It was resumed on March 18, and is still in progress. It consisted in the construction of two parallel piers, 400 feet apart, through the westerly sand bar, 220 feet south of the present western channel. The north pier is 2,220 feet in length by 20 feet in width, and the south pier is 2,500 feet in length, of which 2,600 feet is 20 feet in width, and 500 feet at west end is 30 feet in width; the whole composed of cribwork substructure with concrete superstructure. The channel between the piers is to be 18 feet at low water.

Of this work, up to date, some 472,550 cubic yards scow measurement, of material have been excavated and used for reclaiming about 15 acres on each side of the proposed new channel and about 6 acres in Ashbridge's bay. Three cribs have been sunk in position in the northerly pier and 12 are ready to be sunk.

On June 8, 1908, a contract was entered into, in the sum of \$39,000 for the extension of the island breakwater.

Work was commenced July 8 and suspended on December 5; it consisted in the construction of a line of tongued and grooved sheet piling, 1,500 feet long; of 6 groynes, each 60 feet long by 12 feet wide, of cribwork substructure and concrete superstructure, placed at intervals of 285 feet, centres at right angles to the piling. The north end of each groyne is connected with the shore by a line of close sheet piling. Up to date, this work is about half finished.

On May 22, authority was given to expend the sum of \$5,000 in repairs to the western pier of the Eastern Gap, by day labour.

Work was commenced June 5, completed in August and consisted in the placing of large blocks of stone to form a dry stone wall along the channel side of the pier, for 500 feet by 6 feet wide with an average depth of  $3\frac{1}{2}$  feet, also the construction of a crib, 108 feet long, by 12 feet wide and 5 feet in height, connecting the west pier with the east end of the breakwater.

On July 20, authority was given to place stone filling at the rear of the breakwater extension now under contract with Messrs. Miller & Cumming.

Work was commenced September 1, suspended December 19, and consisted in building a dry stone wall to the full height of the close sheet-piling, varying from 4 to 9 feet, for a length of 1,500 feet and an average width of 10 feet at the top and 12 feet at the bottom.

Total expenditure for fiscal year 1908-9, \$192,634.15.

## TREADWELL.

Treadwell is a post settlement in Prescott county, and port of call of the steamers of the Ottawa River Navigation Company, and a proposed station on the Canadian

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Northern Railway, 13 miles from L'Original, the county seat, and 18 miles from Rockland.

During the last fiscal year, a plot of land, some 2,250 feet square, required for a cattle yard and situated along the upstream side of the approach, was purchased by the Crown.

Amount expended, \$404.75.

## WHITBY.

Whitby, Ontario county, is situated on the north shore of Lake Ontario, 135 miles west of Kingston and 30 miles east of Toronto. Population, 2,300. This harbour is owned and controlled by the Port Whitby Harbour Company, and was purchased by them from the government in March, 1864, for \$25,150. The breakwater is 3,042 feet in length, and the two protection piers, at the entrance are, one 620 feet long and the other 394 feet long.

At the last session of parliament, the sum of \$5,000 was appropriated for harbour improvements at this place, and, on September 18, 1908, authority was given to proceed with the work by day labour.

The work consisted in repairing a portion of the superstructure of the west breakwater for a length of 1,100 feet by a width of 12 feet and an average depth of 3 feet and filling same to the top with large stone.

Total expenditure for fiscal year 1908-9, \$4,763.98.

## WHITE CLOUD ISLAND.

White Cloud, Grey county, is situated in the Georgian bay, at the entrance to Colpoy's bay, some 10 miles northeast from Wiarton. Population 50. A considerable quantity of wood and timber is shipped from this place. It is good grazing and agricultural land.

On May 29, 1907, instructions were given to prepare contract plans and specifications for the construction of a wharf at this place. On December 28, 1907, a contract in the sum of \$4,000 was awarded for the construction of a wharf.

Work was commenced January 14, 1908, and completed May 31. It consisted in the construction of a wharf of cribs and spaces, 140 feet in length, with an 'L' at the outer end, 32 feet by 20 feet, all connected to the shore by a stone approach, 105 feet long by 20 feet wide on top, and having side slopes of 1 in 1.

Total expenditure for fiscal year 1908-9, \$3,495.

## WIARTON.

Warton, Bruce county, is a prosperous town at the head of Colpoy's bay, about 32 miles west of Owen Sound. It is the terminus of the Georgian Bay and Lake Erie Branch of the Grand Trunk Railway.

On July 20, 1908, the sum of \$1,000 was authorized for repairs to the breakwater pier at this place by day labour. The work consisted in the renewal of 125 feet at the shore end of the breakwater with concrete walls and stone filling.

Total expenditure for fiscal year 1908-9, \$787.70.

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## PROVINCE OF MANITOBA.

## GIMLI.

Gimli is a town of some 850 population, on the west shore of Lake Winnipeg, 60 miles north of Winnipeg. For some years, considerable shore erosion has taken place here, the lake having encroached on the public highway and undermined several houses.

During the past season, owing to the abnormal high water, the effect of this erosion has been much more marked. It was decided to build a pile and brush wall along the lake front with a stone toe on the lake side of the structure. The work consists of two parallel rows of piles, 4-foot centres between rows, with piles driven at 8-foot centres on the outer row and 4-foot centres on the inner row. The average penetration is 8 feet and piles are cut off 5 feet above the ground surface.

The space between the piles is closely packed with bundles or fascines of willow brush, the brush being held down by cross-pieces and longitudinal spars, which are placed on top.

The total length of the lake front protected was 2,420 lineal feet.

Four groynes or spurs have been put in at different places for the purpose of breaking the force of the longitudinal wave wash and to aid in the forming of a new beach.

Three of these groynes have been constructed with some 77 cubic yards of stone, which were left over from the construction of the Gimli wharf, and the remaining groyne is of the same type as the pile, brush structure.

Three openings have been left in the protection work, to provide exits for sewers and a small creek.

Actual construction started on September 1 and was completed on November 19, 1908.

*Repairs to Wharf.*

Some 354 lineal feet of the central portion of the wharf and 20 lineal feet of the inner approach have been replanked with 20,000 feet B.M. 3-inch tamarack.

## HNAUSA.

From September 1 to 14, a portion of the Hnausa dock, amounting to 239 lineal feet, was replaced with 3-inch tamarack.

## LAKE DAUPHIN.

The Mossy river takes its source in Lake Dauphin, and empties into Lake Winnipegosis. The total length of the river is 21.4 miles, and the fall in that distance is 24.8 feet.

In periods of low water, the upper portion of the river is quite shallow, especially in the rapids, and the discharge of the river very little.

Lake Dauphin with an area of about 200 square miles, forms the drainage basin of a considerable tract of country, which is being rapidly opened for settlement. Occasionally, in years of heavy precipitation and quick run off, the level of the lake is abnormally high and a considerable area of land, contiguous to the lake is flooded.

The object of the work is to increase the discharge capacity of the Mossy river, by dredging through the shoal places, and thereby carry off the surplus water of Lake Dauphin.

In the stretches, having less than 5 feet in depth, it is proposed to dredge a channel with a width of 40 feet, and a minimum depth of 4½ feet.

It is expected that some 4,000 lin. feet of dredging will be accomplished during the coming season, of an average depth of cut of 2½ feet and width of 40 feet.

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This will cover a length of four miles of the upper part of the river in which there is a fall of two feet.

In the early part of January, a start was made to construct a dredge to be used for the above work, and on March 31, work was practically completed.

The dredge hull is built of British Columbia fir, and is of the following general dimensions: Length, 50 feet; width, 30 feet, and depth, 4 feet 6 inches.

The dredging machinery consists of a 1½-yard orange peal bucket, operated by a 20-h.p. double cylinder, double drum Beatty hoisting engine.

The total expenditure for the last fiscal year, amounted to \$4,032.21.

#### MANITOU RAPIDS.

The object of this work is the removal of a reef of rock in the Winnipeg river, about 3 miles above Fort Alexander.

Owing to the extreme high water throughout the year, this work has not been undertaken.

An expenditure of \$110 was incurred for the providing and setting out of buoys to mark the channel in the Winnipeg river below Manitou rapids, and in the channel leading out into the lake.

Total amount expended, \$188.90.

#### RED RIVER.

##### *Improvements at Mouth.*

Dredge *Assiniboine* was put at work here on June 8, and during the three months succeeding, dredged a channel through the bar, giving an effective depth of 5.4 feet at lowest water, or 9.5 feet at the average stage of water during the season.

This channel was used, during the greater part of the season, by most of the boats navigating on Lake Winnipeg, though no attempt was made to stake or buoy it.

Expenditure, \$13,563.67.

#### ST. ANDREWS LOCK AND DAM.

The progress of the work entailed in the construction of the St. Andrews lock and dam, during the past year, has been entirely satisfactory, and the contract with Messrs. Quinlan & Robertson, for all the masonry work and excavation, is almost completed.

A description of the work performed and rate of progress arranged consecutively by order of months follows:—

April.—The first section of entrance pier No. 1 of the lock begun in the month previous was completed before the spring freshet. This completed 53½ feet of this wall.

The concrete was put in under winter conditions as to heating of materials and protection from frost.

The housing and cofferdam used in the construction of that portion of the dam, built during the winter, were removed before the freshet. The freshet this spring was in no way unusual, the highest water being elevation 701, and no damage was sustained by any part of the work.

Concrete put in place during the month:

Entrance pier No. 1, 360 cubic yards.

May.—The west abutment of dam was carried up from elevation of lock wall and completed during the period, May 4 to 16.

The construction of piers Nos. 2 and 1 was started on the 14th and 23rd inst., respectively. For this purpose a trestle was erected on the permanent dam and the concrete brought, in cars, from the concrete mixing plant on the west side of the lock.

The steam shovel was placed in the canal prism for excavation of canal.

Earth excavated on the west side of the river for the foundations of the east abutment, span No. 6 and pier No. 5 was started.

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The earth from this excavation was used for the purpose of filling in cofferdam for the unwatering of remainder of dam.

The lock pit was unwatered towards the end of the month and kept dry all summer.

The concrete put in place during the month was :

	Cubic yards.
West abutment of dam....	567
Pier No. 1....	252
Pier No. 2....	951
Total..	1,770

June.—Pier No. 2 of dam was completed on June 3, and pier No. 1 on June 16.

The foundations for entrance wall No. 1 were prepared and the wall itself constructed during the period from June 8 to 22. This wall is built on rock.

During the early part of the month, the foundations for entrance pier No. 6, at the upper end of the canal, were prepared and construction of this pier started on the 24th instant.

The upper end of this pier is built on a slope to withstand ice shoves during the freshet. The foundation is hard-pan.

A  $\frac{1}{2}$  yard Smith concrete mixer was installed here to build this pier.

The cofferdam on the east side of the river was completed during this month and unwatering started, a 6-inch centrifugal pump being large enough to take care of the water encountered.

The concrete mixing plant, on the west side of the river, was dismantled, and mixers and crusher erected on the east side of the river for the construction of the remainder of the dam.

Concrete put in place during the month :

	Cubic yards.
Pier No. 2....	64
Pier No. 1....	763
Entrance wall No. 2....	326
Entrance wall No. 6....	500
Total..	1,653

July.—Steam shovel was continued during the month at the excavation of canal prism.

The preparation of foundations for entrance wall No. 6 was continued and the construction of this wall was completed on the 16th.

The foundations for entrance wall No. 5 were also prepared, and the construction of this wall began on the 27th instant. Entrance wall No. 5 is a reinforced concrete wall section.

The foundations of entrance wall Nos. 4 and 1 were also gone on with; in the latter, the work was generally hampered by earth slips from the west bank.

The lower entrance to the lock, between entrance piers, was excavated to grade.

The building of the cofferdam, to unwater the remaining portion of the dam, was continued during the month.

The construction of the east abutment was begun on the 27th instant.

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Concrete put in place during the month :

	Cubic yards
Entrance pier No. 6. . . . .	1,138
Entrance pier No. 5. . . . .	382
East abutment of dam. . . . .	765
Total. . . . .	2,285

August.—In the early part of the month the contractors made preparations to place the closures in the upper cofferdam with a view to diverting the river to the portion of the dam already completed, spans 1 and 2.

Spar poles were used as needles in closing off seven openings of from 8 to 10 feet wide which, up to the time, had been carrying the discharge of the stream.

The space in front of the needles was filled with stone and a track erected over cofferdam to bring the earth filling required in dump cars from the steam shovel excavation of canal prism.

The construction of entrance pier No. 5 was completed during the month.

The construction of the east abutment, span No. 6, and pier No. 5, of dam, was continued during the month.

A portion of entrance pier No. 1, 52 feet in length, was built during the month.

A temporary earth dam was constructed at the upper end of the canal. This was necessitated by the raising of the water above the dam, and was put in to keep the water out of the canal.

During the month, excavation was carried on at the following places:—

Foundation of entrance pier No. 4.

Foundation of entrance pier No. 1.

Steam shovel excavation in canal prism.

Sloping of sides of canal.

Sloping of east side of river.

On the morning of the 29th, about 30 feet of the upper cofferdam, and 70 feet of the lower cofferdam were carried away, and these were replaced without difficulty.

Concrete put in place during month:—

	Cubic yards.
Entrance pier No. 5. . . . .	416
East abutment and dam . . . . .	2,675
Entrance pier No. 1. . . . .	270
Total. . . . .	3,361

September.—The construction of entrance pier No. 4 was started on the 9th, and completed at the end of the month. This pier is 141 feet long, and is a reinforced concrete section.

The east abutment of the dam and pier No. 5 were completed.

In order to hasten the completion of the cofferdam for the remainder of the dam, dredge *Winnipeg* was put at work on the 14th, excavating between cofferdam, casting the material into the lower cofferdam.

Concrete put in place during the month:—

	Cubic yards.
Entrance pier No. 4. . . . .	573
East abutment and pier No. 5. . . . .	1,215
Total . . . . .	1,788

October and November.—Construction of entrance pier No. 3 was begun on October 2, and completed on November 10. The steam shovel was partly used in the



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excavation for this pier. Some difficulty was experienced in this excavation, owing to earth slips and springs, and considerable shoring and unwatering was necessary.

The construction of entrance pier No. 1 was continued and work carried on to completion on November 10. The construction of this pier was also hampered by earth slips, which required the building of this pier in sections.

Entrance pier No. 3 is built on a hard-pan foundation. The total length of this pier is 315 feet, of which 215 feet is a reinforced concrete section and 100 feet is a gravity section, the latter wall being put in a portion of the length which has to resist considerable thrust from back pressure, due to earth slips.

Entrance pier No. 1 is built continuously on rock foundation.

During the above months, earth excavation was carried on in the canal prism and the filling in rear of upper entrance piers Nos. 5 and 6 was put in.

The unwatering of the cofferdam for the construction of the remaining portion of the dam was started during these months. The pumping plant for this work consisted of one 12-inch, one 8-inch and two 6-inch centrifugal pumps.

A large leak in the upper coffer-wall and several smaller leaks in the lower coffer-wall occasioned considerable difficulty until these leaks were finally stopped.

Concrete put in place during these months:—

	Cubic yards.
Entrance pier No. 4. . . . .	77
Entrance pier No. 3. . . . .	2,023
Entrance pier No. 1. . . . .	943
Total. . . . .	3,043

December, January, February and March.—All serious leaks in cofferdam were finally closed and the foundations of the dam unwatered on December 4, and the excavation of earth and loose rock proceeded with.

On December 24, the construction of the dam was begun and progress was uninterrupted until its completion on March 26.

The construction of this portion of the dam was carried on during the winter, and it was necessary to adopt every precaution in the heating of materials forming the concrete and the maintenance of a safe temperature in the work. The dam was built in sections of about 70 feet long, each section being housed in and heated, and work was carried on day and night, thus monolithic results in the concrete.

During the above months the following amounts of concrete were put in:—

	Cubic yards.
Section 1, Dec. 24 to Dec. 31 . . . . .	1,516
Sections 2, 3, 4, January 2 to February 4. . . . .	4,852
Pier No. 3, February 23 to March 11. . . . .	1,164
Pier No. 4, March 12 to March 26. . . . .	1,100
Land Pier East, Mar. 31, unfinished. . . . .	97
Total. . . . .	8,729

## CONSTRUCTION OF LOCK GATES.

The contract for the construction of the lock gates was awarded to Mr. John Burns, of Ottawa, on November 24.

The amount of the contract is \$32,970 and calls for the construction of two complete sets of gates.

The gates are what is known as the solid timber type.

The construction of these gates was started on January 1, 1909, but owing to the delay in delivery of materials, not much work had been done by April 1.

At the present time about 10 per cent of the work has been completed.

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*Movable Dam, Service and Highway Bridge, Repair Shop, &c.*

This contract was awarded to the Canada Foundry Company, Limited, of Toronto, on September 10.

The amount of the contract is \$548,000.

Up to April 1, 1909, no actual erection had taken place.

The total amount expended during the last fiscal year was \$302,630.94.

## ST. LAURENT WHARF.

From March 22 to April 1, repairs were effected on the St. Laurent wharf. They consisted in the putting in of 264 cubic yards of stone filling in the outer end of the wharf and the putting in of tie rods.

The cost of the work has been \$362.16.

## SELKIRK WHARF.

During the period from November 13 to December 9, some 210 lineal feet of the Selkirk wharf was replanked with 3-inch tamarack, and 90 cubic yards of stone filling was put into the wharf.

The cost of the work has been \$82.

## SELKIRK PROTECTION WALL.

During last session, an appropriation of \$500 was voted for the purpose of making repairs to the portions of this work, which were carried away in the spring freshet, last year.

The necessary repairs were made during the months of January and February, and consisting in the replacing of the earth, which had been carried away, by a stone and brush embankment.

## WINNIPEG RIVER, IMPROVEMENTS.

The object of this work is the improvement of the Winnipeg river, for navigation purposes, below Kenora, by the removal of a reef of rocks at Throat rapids.

The present navigable channel of the river is through the Dalles rapids, about 9 miles below Kenora. The river here is concentrated in a narrow passage, and, in periods of high water, the fall through the Dalles is increased, the river gorging at this point.

The intention is to enlarge the bed of the river at Throat rapids, the only other passage of the river, and thereby carry off some of the freshet water and reduce the head at the Dalles.

It was decided to take out this rock in the dry season, and, for this reason, it has been found necessary to take advantage of the low stages of water.

The work was originally started on September 20, 1907, discontinued October 9, owing to a sudden rise in the water.

Work was resumed on April 1, 1908, and continued until May 11, when it was found necessary to discontinue, owing to the rise in water in the river. On this latter date, most of the rock which it was proposed to take out, had been blasted, and an amount of 1,674 cubic yards had been removed.

On October 29, operations were resumed.

As most of the work consisted in the removal of broken rock, a stiff-legged derrick was erected and all loose rock was deposited out on the west bank of the river.

In addition to the above work, it was thought advisable to increase the section of the river at a point, known as the 'Narrows,' some three miles above Throat rapids,

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and on completion of the work at Throat rapids, the work at the 'Narrows' was undertaken and some 800 cubic yards of rock were removed.

The whole work was completed on December 31.

The total amount expended during the fiscal year 1908-9 was \$5,135.41.

## PROVINCE OF SASKATCHEWAN.

## ASSINIBOINE RIVER.

This work consisted in the excavation of a channel across the bend in the Assiniboine river, about 3 miles below the town of Portage la Prairie. The object sought is to afford relief from flooding of lands adjacent, by carrying off the freshet water through this cut, in the spring. The flooding is principally caused by the ice gorging in the bends of the river.

The channel is 1,950 feet in length, average depth of 7 feet, bottom width 20 feet, with side slopes of  $1\frac{1}{2}$  on 1. The material is of an alluvial nature.

The work was laid out on September 18, the clearing and grubbing started on the 21st, and actual excavation commenced on September 30. The work was completed on October 31, 1908.

## LAST MOUNTAIN LAKE.

An examination was made and a report prepared dealing with the watershed in general. This report was prepared to settle the question of damage done to lands by overflowing after the dam was built at Craven.

The examination clearly showed how necessary it is to have continuous gauge readings to record daily fluctuations of all rivers.

## PRINCE ALBERT.

During the fiscal period ended March 31, 1909, a ferry boat, built within the last four years by the city of Prince Albert, was purchased and partly equipped for the purpose of removing boulders from the bed of the North Saskatchewan river, at Prince Albert.

The total expenditure amounted to \$619.54.

## PROVINCE OF ALBERTA.

## LESSER SLAVE RIVER.

Lesser Slave river, in the county of Edmonton, is a stream discharging into the Athabaska, about 90 miles west of Athabaska Landing. The river is 60 miles in length, varying in width from 300 to 600 feet, and is Lesser Slave lake's outlet. About 21 miles of the lower end is broken by a succession of rapids, which were an interruption to navigation. The department built 26 wing dams during the year 1907-8, and 25 others during the year 1908-9; a barge derrick, with orange peel and boulder tongues was also equipped to remove gravel and boulders from the channel and bars, met with at different points along the river, so as to permit navigation to steamboats

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carrying freight to settlers round about Lesser Slave lake to Peace River country, as well as all the way north to the Arctic ocean, where trappers and fur-traders are operating.

The 25 dams built in 1907, aggregated a total length of 3,518 feet; the 28 dams built in 1908-9, 4,109 lineal feet, or a total length of 7,627 lineal feet, at a total cost, for the two year's operation, of \$39,042.43, or an approximate cost per lineal foot of \$5.37.

Dredging operations, which were commenced in 1907-8, with a view to improve the channel, were continued during the last fiscal year.

The total expenditure for the past twelve months amounted to \$14,908.61.

The further ballasting of the dams built last season, and the removal of a quantity of boulders and bars from the channel still remain to be done.

## BRITISH COLUMBIA.

### CAMPBELL RIVER WHARF.

The work in connection with this wharf consisted of some additions and repairs, replacing dolphins, &c. Work commenced on August 26 in getting out piles and towing them to the site of the work. Operations on the wharf were then commenced and continued during the months of September, October, November and December, and were completed by the 31st of the latter month. Some further damage is reported to have been done by the steamers making the landing, carrying away the dolphins protecting the wharf, which is rather exposed, making it difficult to control the steamers using the wharf under adverse winds and strong tides.

Expenditure, \$1,495.35.

### CLAYOQUOT WHARF.

Work was resumed on this wharf on July 28 and completed October 31, 1908. Expenditure, \$2,189.68.

### COLUMBIA RIVER GENERALLY (KOOTENAY DISTRICT).

The appropriation of \$36,500 for this service has been expended as follows:—

Columbia at Revelstoke.—A force was engaged from April 1 to 9, 1908, in completing the frame work on the eastern end of the dam, and from the latter date to May 16 in placing rock along the outer end of the dam. From April 1 to May 15, a crew was engaged in installing the machinery for an orange-peel bucket to replace the dipper formerly used on the dredge *Nakusp*. From the latter date to the end of December, the dredge was engaged in widening and deepening the channel between the outer end of the dam and the island opposite. During the months of January, February and March, 1909, the *Nakusp* was not in commission, but resumed work, after a general over-hauling, a few days before the end of the fiscal year.

Columbia above Golden.—The snag boat *Muskrat* was put in commission early in June. During the season, a small wharf was built at Heffner's landing for the convenience of the settlers on the west side of the river at that point. A wing dam, 250 feet in length, was put in at the head of a bar, about half a mile below the Little Warehouse. All the dams requiring it were repaired, and the usual work of clearing the river banks of sweepers and removing snags from the steamboat channel was attended to. At the end of October, the *Muskrat* was taken to Golden, dismantled, and the crew paid off.

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Columbia at Edgewood.—During November a small party was employed getting a camp made and material on the ground in readiness to commence the construction of a wharf. Actual construction commenced on December 21 and continued until the end of February, when the wharf, which is 380 feet in length and 32 feet in width, with a uniform slope of 1 in 12, was completed. It is a good substantial structure and should prove of considerable value to the settlers of Fire Valley and Edgewood.

The expenditure in connection with 'Columbia River Generally' has been as follows:—

Columbia River at Revelstoke (including wharf at Edgewood).	\$32,083 37
Columbia River above Golden.....	4,412 76
Total.....	<u>\$36,496 13</u>

## COQUITLAM RIVER.

The work of clearing this stream of obstructions by the removal of snags, &c., stranded on bars, to admit of the passage of logs, shingle bolts, &c., was commenced on November 11, 1908, and continued at different times, as required, to the end of the fiscal year, March 31, 1909.

Expenditure, \$993.31.

## COURTNEY RIVER.

This work was commenced on November 9, being completed on October 27, 1908. Some 1,500 boulders and 42 snags were removed from the bar, at the mouth of this river. Some repairs were made to the bulkhead and 32 buoys were placed in position.

Expenditure, \$1,582.45.

## DUNCAN RIVER.

On this river, a force of about fifteen men was engaged from October 8 to November 22, cutting sweepers and removing snags between Haley's Landing and Howser lake.

Expenditure, \$2,465.54.

## FRASER RIVER IMPROVEMENT.

The work on the Fraser river for the past fiscal year may be itemized as follows:—

Extending government wharf at New Westminster, from May 1 to July 8, 1908 .....	\$ 2,745 82
Building two groynes or wing dams on Annieville bar, each 600 feet long, and strengthening the dam built last year with rock.....	15,866 28
New pile-driver.....	3,500 00
Gasoline launch .....	800 00
Steamer <i>Dunsmuir</i> , dragging at mouth of river; drag and harrow over bar.....	2,461 45
Dredge <i>Beaver</i> at Sumas (chartered) .....	564 00
Removal of snags at Minto Landing by dynamite..	84 65
Boat-house for launch and house over hoisting engine on wharf .....	2,122 15
Superintendence, tide gauges, &c.....	<u>2,534 37</u>
Expenditure.....	\$32,603 72
Protection work at Matsqui, in conjunction with the provincial government, each paying half cost..	2,281 50
Dam at Chilliwack, under similar agreement.....	2,500 00

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The reason for the large balance, \$100,114.78, remaining over is the abandonment of the contemplated construction of jetties or training walls at the Sand Heads, at the mouth of the Fraser river. On the purchase, however, of the new German 'Fruhling' suction dredge, at a cost of \$250,000, it was deemed advisable to keep the matter of the construction of these jetties in abeyance until the result of the anticipated exceptional powers of the new dredge were fully ascertained. This dredge is proving very satisfactory as to results, working up to her specified capacity of 1,500 cubic yards per hour. It is quite possible that her ability to maintain a deep water channel at the mouth of the Fraser may obviate the heavy expense of one or more training walls or jetties, which, until such time as the dredge has proven her powers, need not be considered.

## FRASER RIVER ABOVE QUESNEL-COTTONWOOD CANYON.

The expenditure on this work during the past fiscal year was confined to the month of April, 1908, when operations were resumed and the improvements completed. During the summer, a wire cable was put in the canyon to facilitate the passage of steamers by warping up against the strong current. This cable was furnished by our department and placed in position by the crew of the steamer *Charlotte*, which, during the season, made six trips up the river through the canyon. Within the past few days, word was received from Quesnel that some of the eye-bolts have drawn out. Instructions were given to have heavier bolts made and more carefully embedded in the rock.

Expenditure, \$2,492.10.

## FRASER RIVER WHARFS.

Under this head the following wharfs were built during the fiscal year ending March 31 last :—

Pitt river, at a cost of.....	\$ 2,212 80
East Haney, at a cost of.. . . .	1,647 09
Donatelli's landing, at a cost of.. . . .	1,650 32
Dewdney, at a cost of.. . . .	1,850 66
Brownsville, at a cost of.. . . .	1,638 15
Hatzic, at a cost of.. . . .	2,298 11
Rosedale and Agassiz Ferry, at a cost of.. . . .	1,787 64
Port Moody, at a cost of.. . . .	2,692 16
Port Haney, at a cost of.. . . .	2,044 70
Total.. . . .	<u>\$17,821.63</u>

## HARDY BAY WHARF.

The entire piling was renewed, the superstructure lifted, and flooring replaced. Piles were got in September, 1908, and work was commenced on November 16, being completed on January 9, 1909.

Expenditure, \$1,981.95.

## KOOTENAY RIVER AT PROCTER.

Owing to the river freezing over only a small amount of work was done on this service. Work was done from the 12th to the end of March, and, during that time, a number of boulders were removed from the channel.

Expenditure, \$978.33.

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## NAAS RIVER.

On the retirement of the old *Suag Scow* from the work on the Skeena river, on the arrival of the new Suag Boat *Cygnat*, on May 1, 1908, instructions were received to make the necessary repairs and put the Suag Scow in shape for work on the Naas river. On May 28, the Suag Scow was towed from the Skeena to the Naas by the tug *Chieftain* and the work of snagging was prosecuted; very good work being done and many snags removed. Operations ceased on August 31.

The expenditure in connection with this Suag Scow, while operating on the Naas river, will be found under the head of 'Dredging, B.C.'

## NANAIMO HARBOUR.

The expenditure on this service is represented by the cost of dredging in front of the different wharfs of the city and coal companies; in cutting a channel to the new ferry slip built by the Western Fuel Company, and building a landing stage for the city.

## Expenditure—

Dredging, &c. . . . .	\$3,251 32
Landing stage. . . . .	2,204 12
	<hr/>
	\$5,455.44

## OKANAGAN RIVER.

On October 13, the small dredging plant used at Long and Woods lakes was moved to Penticton, and from then until the end of November, a small crew was engaged in building a barge and placing thereon the dredging plant moved from Long and Woods lakes. Some dredging was done during December on the Okanagan river, about half a mile from where it leaves Okanagan lake. The dredge known as the *Heron* was tied up for the winter at the end of December.

Work was resumed on this service on March 1. From March 1 to 14, the time was occupied in building a house-boat to be used as quarters for the crew of the *Heron*, the actual cost of which was about \$350. Dredging was then continued where left off at the end of December.

Expenditure, \$4,621.79.

## QUATSINO WHARF.

Work was resumed on this wharf on August 1 and completed September 12, 1908.

Expenditure, \$1,005.95.

## SALMON ARM WHARF.

From November 6 to 23, a small party was employed building a warehouse on the wharf constructed last spring and in driving some fender piles along the sides of the wharf. From April 25 to August 15, the dredge *Pelican* was engaged dredging a channel from deep water into the wharf.

Expenditure, \$1,433.22.

## SIDNEY WHARF.

Work was commenced on this wharf at the end of September, 1908, and completed on January 31, 1909. The dimensions of this structure are as follows: Main wharf, 100 feet by 50 feet, with slip, 8 feet by 20 feet; approach, 360 feet by 20 feet; small warehouse, 18 feet by 36 feet.

Expenditure, \$6,989.82.

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## SKEENA RIVER.

The work consists in keeping the river clear of snags, brought down annually by the high water, in the interests of the salmon fishermen. Operations were resumed by the old snag scow on April 1, 1908, and continued until she was replaced by the new snag boat *Cygnat*, on May 1, when Captain Noel was placed in charge and the crew transferred. The temporary crew which had taken the *Cygnat* from New Westminster, where she was constructed, to Port Essington, returned here on the tug *Petrel*, which had conveyed the *Cygnat* to the Skeena. The new snag boat continued the work of removing snags and, in some cases, boulders, until the end of October, doing very satisfactory work. She was then hauled out and placed in charge of a caretaker for the winter.

Expenditure, \$12,022.02.

## Sooke Harbour.

The preliminary work of building a scow for drilling purposes and fixing up a boarding camp, &c., was commenced on October 16, 1908. Drilling operations were commenced on November 30, but had to be shut down on account of cold weather on January 3. Work was resumed on February 3 and continued until March 18, when the work was closed down owing to the appropriation having been expended. Owing to the exposed condition, the bad weather considerably delayed the operations. The rock was very hard and full of seams, making the work of drilling slow and difficult, as many holes had to be abandoned, owing to the drills following the seams and becoming wedged fast. Springing these holes with powder in some cases relieved the jam but caused delay. The two worst points of the rock have been blasted and broken up, but the material has not yet been removed, there being no appliances for this purpose. Another trouble we had to contend against was the fact that during the winter months the tide was high all day, and, as the rains made Sooke harbour very muddy, it was difficult to find the holes on resuming work each day. The drill scow had to be removed every morning to and from its position on the work, as the site of operations is open to the prevailing winds from the south and southwest.

Expenditure, \$7,196.77.

## SPALLUMCHEEN RIVER.

Work in connection with the protection of the bank of this stream at Enderby was commenced in November and continued until the beginning of January. The old protection work was repaired, where requiring it, and new work carried up stream for a distance of 290 feet.

Expenditure, \$2,266.90.

## STICKINE RIVER.

The geographical position of this work, between Glenora and Telegraph Creek, the practical head of navigation on the Stickine river, is, very approximately, latitude 58 north and longitude 131 west. It is situated in the constituency of Comox-Atlin.

Operations were commenced October 15, at Glenora riffle, half a mile above Glenora, and consists of the removal by blasting, of some 22 boulders that were too large to be otherwise handled. This work was completed November 15, and operations were begun at Big riffle, the worst place on the river, and where there was a reef of bad rock running across the stream. The high points were blasted off, but the work was stopped on December 2.

On February 1, 1909, work was resumed, at Six Mile creek, where seven large boulders were blasted and removed, as well as a sunken reef. This work was com-



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pleted by February 15. From February 16 to 28, work was in progress at the mouth of the First South Fork of the Stickine, about 2 miles below Telegraph creek. Here a sunken reef, about 120 feet long and 75 feet wide (at its widest part) was blasted down to low water line, an average of some three feet being taken off. On March 1, work was resumed at Big riffle and the high points of the sunken reef were drilled and blasted. The work was closed down on March 31, 1909.

Expenditure, \$5,175.47.

## THOMPSON RIVER.

The dredge *Pelican* was engaged in cutting a channel across a bar at the head of Chase's riffle, from August 18 to November 21, and was then moved to Chase's landing to deepen the approach to the wharf. During December, the bar at the mouth of Little river was dredged to a sufficient depth to allow the tug boats to pass, and, at the end of the month, the crew was laid off until the end of February, when dredging was resumed and continued until the end of March.

Expenditure, \$12,363.31.

## UNION BAY WHARF.

Owing to a dispute as to the location of this wharf, the commencement of the work was delayed until too late to come within the life of the appropriation, but all the necessary material for the construction of the wharf has been delivered and a further vote of \$3,000 has been asked to cover the cost of labour in erection, which work will be begun as soon as the money is available.

Expenditure, \$2,848.48.

## UPPER LILLOOET RIVER.

This work was started on November 1, 1908, that is a camp was made, but, owing to high water, no work of any consequence was done until November 15, when the removal of jams was commenced and continued until December 31, when it closed down for the winter. The balance remaining of the appropriation did not admit of work being resumed before the expiration of the fiscal year at the end of March last, the month of spring rise.

Expenditure, \$2,484.01.

## VANCOUVER HARBOUR.

The comparatively large appropriation under this head was given with the idea of beginning the work of removing Parthia shoal in the First Narrows. Although a menace to ships of heavy draft entering or leaving the harbour at extreme low tide, and in the interests of the constantly increasing traffic of this port, it was not imperative that the work of removal should be commenced at once, or until such time as a complete survey would enable us to approximately estimate the cost before committing the government to a heavier expenditure than was realized at the time of making this initial appropriation. Since then, representations have been made to the government for a comprehensive scheme of heavy dredging operations in False creek and Coal harbour, and in widening the entrance to the First Narrows. To arrive at some idea of the cost and magnitude of this work, it was necessary to have a full survey and complete set of soundings. False creek had already been surveyed and borings were made during the summer of 1908. Since January 1 last, a survey of Coal harbour and the First Narrows is being made. The former is completed and survey is now being made at the Narrows, where the work is exceptionally difficult, as the ebb and flood tides pass through the Narrows at the rate of 8 and 9 knots per hour, with practically no interval, or not more than 15 minutes of slack water, making the work of sounding one of difficulty and care. In addition, the fogs of the winter months made work at

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times impossible. Fortunately, Coal harbour gave us the chance to work when the Narrows were impossible. The latter are now, under very improved conditions, being carefully surveyed and a couple of months, it is hoped, will see this work completed.

Expenditure, \$2,004.95.

## VICTORIA HARBOUR.

The operations under this head consisted of the work of the five yard dipper dredge *Ajax*, the two yard dipper dredge *Mud Lark*, and the rock drilling plant.

(a) *Dredge Ajax*.—This is a five yard dipper steel hull dredge, built by the Polson Iron Works, of Toronto, and assembled at New Westminster. She was given her first trial on August 22 last, accepted and practically placed in commission on that date, subject to the terms of contract requiring a 30 days' working test, and a further test of five months under ordinary conditions. She left for Victoria on September 4, where she has remained at work on the entrance channel between the outer and inner harbours and where she has been doing satisfactory work.

Expenditure, \$20,903.

(b) *Dredge Mud Lark*.—This dredge is a wooden hull with two yard dipper and was purchased by the Dominion government from Messrs. R. P. Rithet & Co., Ltd., of Victoria, B.C., on August 31, 1893. She has now been 16 years in the government service and was some two or three years in commission before purchase. She worked in Victoria harbour from April 1 to June 18 last, when she went to Union, B.C., to deepen in front of the coaling wharfs at that point (which service was charged to 'Dredging B.C.'). She returned to Victoria at the end of June, where she remained until August 14, when she was ordered to Nanaimo to deepen in front of the coaling and other wharfs in that harbour. She returned again to Victoria on September 14, and, with the advent of the *Ajax*, was placed in the upper harbour, where she is now at work. Considering her age and many years of hard work, she is still giving a good account of herself, and will, it is hoped, for some years to come. Naturally her expenses in renewals and repairs have been somewhat heavy.

Expenditure, \$20,605.83.

(c) *Rock drilling plant*.—Our appliances for this purpose are somewhat antiquated. This work of blasting was commenced on *Mud Lark* rock, at the entrance to the Canadian Pacific Company's slips on July 17 last and completed on October 9. Her work totalled—

Number of holes drilled....	276
Total length of holes....	924 feet.
Diameter of holes....	2½ inches.

On October 10, the drill platform, &c., was moved to Tuzo rock and work continued there until closed down on March 29th last. The work totalled:—

Number of platforms set....	13
Number of holes drilled....	511
Total length of holes....	2,155 feet 3 inches.
Diameter of holes....	2½ inches.

The expenditure in connection with Victoria harbour represented by the dredge *Ajax* and *Mud Lark*, and the drilling plant was as follows:—

<i>Ajax</i> ....	\$20,903 00
<i>Mud Lark</i> ....	20,605 83
Rock drilling plant....	8,700 11
Total..	\$50,208 94

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## WILLIAMS HEAD.

*Quarantine Station.*

This work consisted of repairs to main wharf, which is now in good condition. The repairs comprised an almost complete renewal of the superstructure, by new caps, joists and planking and some new fender piles.

The intake pipe and settling chamber in connection with water works were overhauled and all woodwork renewed, and the valves were rearranged to facilitate the cleaning of the chambers when necessary.

A new boat-house was built for the gasoline launch. The old one was hauled out of the water and converted into a workshop for use of the staff at the station.

Expenditure, \$9,937.39.

## WOODS AND LONG LAKES.

From April 1 to June 15, a party was employed on this work, in completing the approach to the bridge erected across the channel connecting the lakes; in driving protection piles, and in mattrassing the Woods lake end of the channel to prevent it being scoured by the heavy waves which are of frequent occurrence on Woods lake; deepening the channel with a Stanley scraper, and in installing a small dredging plant, purchased for this service. Work was practically closed down from June 15 to July 29, owing to a delay in the arrival of the bucket. The latter having arrived, dredging was commenced on August 3 and continued until the completion of the channel, about September 28. From this date, the party was employed until October 14 in protecting the head of the outlet of Long lake; dismantling the dredge and shipping the machinery to Penticton for use on the Okanagan river. The channel opened between Woods and Long lakes is 640 feet in length, 40 feet in width, and has a mean depth of 4.5 feet. The bridge erected across the channel is a good substantial structure. The main span is 40 feet long, 12 feet wide, and has a headroom of 20 feet.

Expenditure, \$4,936.71.

## DREDGING OPERATIONS.

During the fiscal year 1908-9, dredging was performed in the following places:—

### PROVINCE OF NOVA SCOTIA.

Battery Shoal, Cape Breton county.  
Dominion Coal Company, wharf, Louisburg, Cape Breton county.  
Lewis wharf and shoal outside, Cape Breton county.  
La Have river, Lunenburg county.  
Liverpool, Queens county.  
Marine Slip, Yarmouth, Yarmouth county.  
Pictou bar, Pictou county.  
Port Mulgrave, Guysborough county.  
Sherbrooke, Guysborough county.  
Yarmouth, Yarmouth county.

### PROVINCE OF NEW BRUNSWICK.

Blacks Harbour, Charlotte county.  
Clifton, Kings county.  
Flewellings wharf, Kings county.  
Hampton, Kings county.  
Harbour channel, St. John, St. John county.  
Hillyards wharf, Dalhousie, Restigouche county.  
Long island, Kennebecasis river, Kings county.  
L'Etété, Charlotte county.  
Moss Glen, Kings county.  
Murphys wharf, Perry Point, Kings county.  
Oak Bay, Restigouche county.  
Reids Point wharf, Kings county.  
Rothesay, Kings county.  
Sealys shoal, Kings county.  
St. Andrews (new wharf), Charlotte county.  
St. Andrews, basin, eastern entrance, Charlotte county.  
St. George, Charlotte county.  
Traverse, Restigouche county.  
Whitehead, Kings county.  
Winter port berths, St. John, St. John county.

### PROVINCE OF PRINCE EDWARD ISLAND.

Aunandale, Kings county.  
Murray river, Kings county.  
Murray harbour south, Kings county.  
McPhersons cove, Grand river, Kings county.  
Pownal, Queens county.  
Souris, Kings county.  
Victoria (Crapaud), Queens county.

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## PROVINCE OF QUEBEC.

Bar between Campbellton and Mission Point, Bonaventure county.  
Mission Point, Bonaventure county.

## PROVINCE OF NOVA SCOTIA.

## BATTERY SHOAL, CAPE BRETON COUNTY.

The dredge *Cape Breton* was engaged from the 18th to 21st, 23rd, 26th, 27th and 30th May, and 1st to 15th and 20th to 26th and 29th June, and 1st to 4th, 8th, 22nd, 23rd, 30th and 31st July at Battery Shoal, Louisburg, Cape Breton county, removing 13,545 cubic yards clay, stone and boulders, at a cost of 52.59 cents per cubic yard. On several occasions, an effort was made to place this dredge for work at Big Lorrain, which on each occasion failed, leaving this work and Louisburg unfinished.

## DOMINION COAL CO. WHARF, LOUISBURG, CAPE BRETON COUNTY.

On May 22, 1908, the dredge *Cape Breton* removed two lumps, 210 cubic yards, from the Dominion Coal Company pier, at a cost of 67.39 cents per cubic yard. The material dredged here was clay and coal.

## LEWIS' WHARF AND SHOAL OUTSIDE.

From May 19 and 20 and June 27 and 30, and July 9, 10, 13 to 18, 20, 21 and 29, this dredge was engaged at W. W. Lewis' wharf and at a shoal outside, removing 11,130 cubic yards of ballast, sand, stone and clay, at a cost of 35.29 cents per cubic yard.

## LA HAVE RIVER, LUNENBURG.

From April 6 to May 14, 1908, the dredge *Northumberland* removed 128,086 cubic yards mud, sawdust and debris from the La Have river, Lunenburg county, N.S., at a cost of 3.43 cents per cubic yard, when the dredge was ordered to Liverpool, Queens county.

## LIVERPOOL, QUEENS COUNTY.

From May 15 to July 31, 1908, the dredge *Northumberland* removed from the Liverpool basin, 57,813 cubic yards mud and silt, at a cost of 19.54 cents per cubic yard.

## MARINE SLIP, YARMOUTH, YARMOUTH COUNTY.

From April 18 to 25, 1908, the dredge *Canada* removed 1,700 cubic yards mud, &c., at the Marine Slip, Yarmouth, Yarmouth county, at a cost of 70.12 cents per cubic yard.

## PICTOU BAR, PICTOU COUNTY.

From April 28 to May 20, 1908, the dredge *St. Lawrence* was engaged completing the work on the Pictou bar, Pictou county, to a depth of 25 feet, L.W.S.T., by removing 7,560 cubic yards sand, at a cost of 48.98 cents per cubic yard.

## PORT MULGRAVE, GUYSBOROUGH COUNTY.

From April 30 to May 11, 1908, the dredge *George McKenzie* was engaged dredging at Port Mulgrave, Guysborough county, in front of Messrs. Lowgies wharf, forming a channel and basin, by removing 3,735 cubic yards mud and clay, at a cost of 21.87 cents per cubic yard.

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## SHERBROOKE, GUYSBOROUGH COUNTY.

From May 12 to July 31, 1908, the dredge *Gorge MacKenzie* was engaged at Sherbrooke, Guysborough county, removing 15,925 cubic yards boulders and gravel, at a cost of 35.48 cents per cubic yard.

## YARMOUTH, YARMOUTH COUNTY.

From April 26 to June 30, and July 24 to 31, 1908, the dredge *Canada* was engaged at Yarmouth, Yarmouth county, removing 34,735 cubic yards mud, at a cost of 34.74 cents per cubic yard.

## PROVINCE OF NEW BRUNSWICK.

## BLACKS HARBOUR, CHARLOTTE COUNTY.

From December 16 to 28, 1908, the dredge *New Dominion* was engaged at Black's Harbour, Charlotte county, removing 2,055 cubic yards mussel mud and gravel, at a cost of 52.31 cents per cubic yard.

## CLIFTON, KINGS COUNTY.

From June 10 to 13, 1908, the dredge *New Brunswick* was employed dredging at Clifton wharf, where it removed 620 cubic yards stone and gravel, at a cost of 32.91 cents per cubic yard.

## FLEWELLINGS WHARF, KINGS COUNTY.

From May 23 to June 2 the dredge *New Brunswick* was engaged improving the channel at Flewelling's wharf, removing 1,400 cubic yards clay, stone and mud, at a cost of 29.51 cents per cubic yard.

## HAMPTON, KINGS COUNTY.

The dredge *New Brunswick* was employed from October 16 to November 4, 1908, at Hampton channel and wharf, removing 6,020 cubic yards sand, &c., at a cost of 32.86 cents per cubic yard, the work being unfinished.

## HARBOUR CHANNEL, ST. JOHN.

From April 1 to October 29 and November 7 to 25 and December 19 to March 16, 1909, the dredge *W. S. Fielding* was engaged on the outer entrance and on the foul ground, St. John harbour, improving the width of the channel to 400 feet, and to a depth of 30 feet, L.W.S.T., removing 336,870 cubic yards stone, gravel, mud and sand, at a cost of 21.24 cents per cubic yard.

## HILYARDS WHARF, DALHOUSIE, RESTIGOUCHE COUNTY.

The dredge *St. Lawrence* was employed at Hilyards wharf, Dalhousie, Restigouche county, from October 1 to November 9, 1908, removing 15,400 cubic yards mud and blue clay, at a cost of 21.24 cents per cubic yard.

## LONG ISLAND, KENNEBECASIS RIVER, KINGS COUNTY.

From April 15 to May 23, and June 18 to 22 and November 14 to 18, 1908, the dredge, *New Brunswick* was engaged at Long Island, Kennebecasis river, in dredging and driving piles at Mathers, and removing 5,380 cubic yards brick, clay and gravel, at a cost of 37.95 cents per cubic yard.

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## L'ÉTÉ, CHARLOTTE COUNTY.

The dredge *New Dominion*, from November 27 to 30, and December 1 to 15, 1908, removed 4.145 cubic yards soft black mud at L'Etê. Charlotte county, at a cost of 28.64 cents per cubic yard, and finishing the work there.

## MOSS GLEN, KINGS COUNTY.

At Moss Glen, Kings county, the dredge *New Brunswick* removed, from June 15 to 17, 1908, 770 cubic yards hard clay and gravel, at a cost of 21.66 cents per cubic yard.

## MURPHYS WHARF, PERRYS POINT, KINGS COUNTY.

From July 1 to 9, and November 5 to 7, 1908, the dredge *New Brunswick* was engaged dredging at Murphys wharf, Perrys Point, Kings county, removing 9,050 cubic yards mud, clay, &c., at a cost of 10.50 cents per cubic yard.

## OAK BAY, RESTIGOUCHE COUNTY.

From July 29 to August 8, 1908, the dredging at Oak Bay, Restigouche county, was performed by the *St. Lawrence*. Some 7,770 cubic yards sand was removed, at a cost of 21.92 cents per cubic yard.

## REIDS POINT WHARF, KINGS COUNTY.

From June 3 to 9, and November 10 to 13, 1908, the dredge *New Brunswick* was employed at Reids Point wharf, Kings county, removing 980 cubic yards hard clay and gravel, at a cost of 46.48 cents per cubic yard.

## ROTHESAY, KINGS COUNTY.

At Rothesay, Kings county, the dredge *New Brunswick* was engaged November 19 and 20, in removing 130 cubic yards hard clay, stone, &c., at a cost of 17.43 cents per cubic yard.

## SEALYS SHOAL, KINGS COUNTY.

From July 20 to October 15, 1908, the dredge *new Brunswick* was employed on Sealy's shoal, improving the channel, removing 34.615 cubic yards sand, logs, clay, &c., at a cost of 11.20 cents per cubic yard.

## ST. ANDREWS, CHARLOTTE COUNTY.

From May 21 to August 24, 1908, the dredge *New Dominion* removed 20,250 cubic yards red clay, gravel, stone, &c., from the foundation of new wharf at St. Andrews, at a cost of 24.46 cents per cubic yard, and from August 25 to September 9, 1908, and January 8 to March 31, 1909, this dredge removed 20,550 cubic yards sand, shells, &c., from the St. Andrews basin (eastern entrance), at a cost of 34.35 cents per cubic yard.

## ST. GEORGE, CHARLOTTE COUNTY.

From September 10 to November 26, 1908, the dredge *New Dominion* was engaged at St. George, Charlotte county, removing 12,720 cubic yards sand, shells, edgings and saw-dust from the channel and basin there, at a cost of 43.98 cents per cubic yard.

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## TRAVERSE, RESTIGOUCHE COUNTY.

From August 9 to September 30, 1908, the dredge *St. Lawrence* was engaged dredging at the Traverse, Restigouche county, removing 24,290 cubic yards sand, at a cost of 29.66 cents per cubic yard.

## WHITEHEAD, KINGS COUNTY.

From June 23 to 30, 1908, the dredge *New Brunswick* was employed dredging at wharf at Whitehead, Kings county, removing 2,500 cubic yards clay and gravel, at a cost of 16.07 cents per cubic yard.

## WINTER PORT BERTHS, ST. JOHN, ST. JOHN COUNTY.

From October 30 to November 6, and November 27 to 30, and December 1 to 17, 1908, the dredge *W. S. Fielding* was engaged at the winter berths, St. John harbour, in removing rocks, boulders and in cleaning, from the steamship berths, to a depth of 31 feet. L.W.S.T., 13,675 cubic yards being removed, at a cost of 28.17 cents per cubic yard.

The dredge *W. S. Fielding* is 42 feet beam, and, as the bucket ladder drops in the centre of the dredge, the work cannot be performed closer than 20 feet from the sides of the winter port wharfs, leaving a beam of 20 feet next the wharfs, with the places 20 to 30 feet depth at spring tides.

## DREDGING IN PRINCE EDWARD ISLAND.

## MURRAY RIVER, KINGS COUNTY.

From July 15 to September 26, 1908, the dredge *Montague* was engaged dredging at Murray river, Kings county, improving the channel and at the wharf, by removing 27,550 cubic yards mud and stone, at a cost of 35.39 cents per cubic yard.

## MURRAY HARBOUR SOUTH, KINGS COUNTY.

From October 15 to November 23, 1908, the dredge *Montague* was employed at Murray Harbour south, improving the channel, by removing 4,650 cubic yards sand and mud, at a cost of 42.87 cents per cubic yard.

## MC PHERSON'S COVE, GRAND RIVER, KINGS COUNTY.

The dredge *Montague* was engaged from May 26 to June 11 and July 10 to 14, 1908, at McPherson's cove, improving the depth of water in front to 10 feet, L.W.S.T., and sides of wharf graded to 6 feet at 180 feet from the front of wharf, 40 feet wide up the sides of wharf, removing 7,700 cubic yards mud and sand, at a cost of 52.33 cents per cubic yard.

## ANNANDALE, KINGS COUNTY.

At the public wharf, Annandale, Kings county, the dredge *Montague* was employed from June 12 to July 9, 1908, removing 11,800 cubic yards mud and sand, to a depth of 10 feet, at L.W.S.T., at a cost of 32.28 cents per cubic yard.

## POWNALE, QUEENS COUNTY.

The dredge *Prince Edward* was employed dredging at Pownal bay wharf, Queens county, from September 29 to November 23, and removed 5,985 cubic yards hard clay, brick and mud from the channel and basin there, at a cost of 61.23 cents per cubic yard.



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## SOURIS, KINGS COUNTY.

From May 6 to 25 and November 24 to 30, 1908, the dredge *Montague* was engaged dredging the harbour of Souris, Kings county, grading from 20 to 12 feet L.W.S.T., removing 5,350 cubic yards sand, clay and snags, at a cost of 64.40 cents per cubic yard.

## VICTORIA (CRAPAUD), QUEENS COUNTY.

From May 1 to September 28, 1908, the dredge *Prince Edward* was engaged dredging at Victoria (Crapaud), Queens county, removing, at the channel and at the wharfs, 34,695 cubic yards sand, mud, &c., at a cost of 37.87 cents per cubic yard.

## PROVINCE OF QUEBEC.

## CAMPBELLTON AND MISSION POINT, BONAVENTURE COUNTY.

From June 20 to July 14, 1908, the dredge *St. Lawrence* was engaged improving the bar between Mission Point and Campbellton, N.B., while a ship was loading at Mission wharf, removing 7,770 cubic yards sand, &c., at a cost of 41.52 cents per cubic yard. This work was not finished.

## MISSION POINT, BONAVENTURE COUNTY.

The dredge *St. Lawrence* was engaged at Mission Point, Bonaventure county, from June 1 to 19, and from July 15 to 28, 1908, removing 9,450 cubic yards sand, gravel and rubbish, at a cost of 47.93 cents per cubic yard. The work here was completed.

## DREDGING PLANT.

The following is a summary description of the dredging plant owned and operated by the Public Works Department in the maritime provinces:—

*The Self-Propelling Elevator Dredge 'Canada' (iron hull).*

Length over all, 130 feet; beam, 20 feet; draft, when loaded, aft, 11.5 feet; draft when loaded, forward, 7 feet; least working depth, 7 feet; greatest working depth (ladder, 24 buckets), 16 feet.

Capacity of hopper for spoil material, 90 cubic yards.

Speed when light and newly painted, 6 to 7 miles per hour.

Speed when loaded, 3 to 4 miles per hour.

Daily rate of dredging in hard bottom, 180 to 270 cubic yards.

“ “ with ordinary digging, 180 to 360 cubic yards.

“ “ in soft material, 360 to 450 cubic yards.

“ “ using barges to remove spoil, 600 to 1,000 yards.

Number of steel barges used, two.

*The Spoon Dredge 'New Dominion' (wooden hull).*

Length over all, 90 feet; width, 28 feet; draft, 5½ feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

“ “ with ordinary material, 450 cubic yards.

“ “ on soft material, 600 to 700 cubic yards.

Number of dump scows or barges used, two.

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*The Self-Propelling Elevator Dredge 'St. Lawrence' (iron hull).*

Length over all, 175 feet; beam, 30 feet; draft, when loaded, aft, 13.5 feet; draft when loaded, forward, 8.5 feet; least working depth (ladder with 32 buckets dropped 30 feet from bow), 8.5 feet; greatest working depth (bucket ladder dropped 40 feet from bow), 28 feet.

Capacity of hopper for spoil material, 350 cubic yards.

Speed when light, 6 to 7 miles per hour.

Speed when loaded, 3 to 4 miles per hour.

Daily rate of dredging hard material, 350 to 700 cubic yards.

" " ordinary earth, 750 to 1,000 cubic yards.

" " soft material, 1,050 to 1,400 cubic yards.

" " using barges to remove spoil, 1,200 to 1,600 cubic yards.

Number of steel barges used, three.

*The Spoon Dredge 'Prince Edward' (wooden hull).*

Length over all, 80 feet; width, 28 feet; draft, 6 feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

Daily rate of dredging with ordinary material, 500 cubic yards.

Daily rate of dredging in soft material, 600 to 700 cubic yards.

Number of dump scows used, 3.

*The Spoon or Dipper Dredge 'Geo. McKenzie' (wooden hull).*

Length, 90 feet; width, 28 feet; draft 6 feet; greatest working depth, 22 feet.

Daily rate of dredging in hard material, 350 cubic yards.

Daily rate of dredging in ordinary material, 500 cubic yards.

Daily rate of dredging in soft material, 600 cubic yards.

Number of dump scows or barges used, two.

*The Boom and Dipper Dredge 'Cape Breton' (steel hull).*

Length, 91 feet; beam, 36 feet; draft,  $7\frac{1}{2}$  feet; greatest working depth, 34 feet.

Daily rate of dredging in hard material, 1,000 cubic yards.

Daily rate of dredging in ordinary material, 1,500 cubic yards.

Daily rate of dredging in soft material, 2,000 cubic yards.

Number of barges used (each of 200 yards capacity, steel), three.

*The Clam Shell Dredge 'New Brunswick' (wooden hull).*

Length over all, 90 feet; width, 25 feet; draft,  $2\frac{1}{2}$  feet; greatest working depth, 17 feet.

Daily rate of dredging in hard material, 180 cubic yards.

Daily rate of dredging with ordinary material, 300 cubic yards.

Daily rate of dredging soft material, 450 cubic yards.

Number of decked scows used, 3 as at present and 2 bottom dumping scows.

*The Self-propelling Elevator and Sand Pump Dredge 'W. S. Fielding' (steel hull).*

Length over all, 247 feet; width over all, 42 feet; draft when loaded, aft, 19 feet; greatest working depth, 61 feet.

Capacity of hoppers for spoil, 1,000 cubic yards.

Speed when light, 7 miles per hour.

Speed when loaded, 4 miles per hour.

Daily rate of dredging, 2,000 cubic yards with buckets.

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Daily rate of dredging, 1,000 cubic yards with sand pump.

Daily rate of dredging using barges to remove spoil, 1,000 to 4,000 cubic yards.

Number of steel barges used, four.

*The spoon Dredge 'Montague' (steel hull).*

Length over all, 90 feet; width, 37 feet 8 inches; draft 5 feet 6 inches; greatest working depth, 28 feet.

Daily rate of dredging, 10 hours, 1,000 cubic yards.

Number of barges used, two, 72 feet long, 19 feet 8 inches wide, depth, 7 feet.

*The Sand Pump Dredge 'Northumberland' (steel hull).*

Length, 130 feet; agitator, 65 feet; width, 52 feet, draft, 7 feet, working depth, 40 feet.

Daily capacity, 2,000 to 4,000 cubic yards in 10 hours.

Number of steel barges used, two.

*Tug 'Cricket.'*

Length, 36.5 feet; beam, 7.3 feet; draft, 3.10 feet; horse-power, 4.

*Tug 'Rona.'*

Length, 85 feet; beam, 19.3 feet; draft, 8 feet; horse-power, 25.

One pile-driver, engine and boiler fitted on scow.

One stone lifter, engine and large grips (no boiler).

*Tug 'Helena.'*

Length, 111 feet; beam, 23 feet; hold, 13 feet; horse-power, 87.

MEMORANDUM of quantities removed by the several dredges in the maritime provinces, &c., during the fiscal year 1908-9.

	Cubic yards.
<i>St. Lawrence</i> . . . . .	72,240
<i>*Canada</i> . . . . .	36,435
<i>New Dominion</i> . . . . .	59,720
<i>Prince Edward</i> . . . . .	40,680
<i>*Geo. McKenzie</i> . . . . .	19,660
<i>*Cape Breton</i> . . . . .	24,885
<i>New Brunswick</i> . . . . .	51,465
<i>W. S. Fielding</i> . . . . .	350,545
<i>Montague</i> . . . . .	57,050
<i>*Northumberland</i> . . . . .	15,899
	<hr/>
	898,579

\*Quantities for these dredges are only given to July 31, 1906, after which Mr. C. M. Graham, superintendent dredging, Nova Scotia, had control of these dredges.

9-10 EDWARD VII., A. 1910

## CLASSIFICATION OF Disbursements of the Dredges in the Maritime Provinces during the year ending March 31, 1909.

DREDGE 'ST. LAWRENCE.'

Items.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	525 98	625 62	621 63	621 63	625 00	622 94	624 93	699 32	515 70	309 00	305 25	249 73	4,347 42
Coal.....	205 83	223 56	415 25	354 20	297 00	506 00	570 02	.....	334 75	.....	.....	80 85	3,012 06
Provisions..	72 91	274 88	.....	772 71	303 52	240 54	144 18	.....	390 04	27 74	.....	.....	2,225 52
Stores.....	317 20	12 77	8 00	263 19	.....	.....	.....	.....	22 66	6 65	.....	62 20	692 67
Equipment..	.....	.....	74 88	.....	.....	.....	.....	.....	.....	.....	.....	30 38	165 26
Water.....	.....	.....	10 00	.....	10 50	7 90	.....	.....	10 00	10 00	.....	.....	48 40
Repairs.....	9 35	.....	174 58	566 21	.....	.....	.....	.....	2,049 64	.....	306 49	118 41	3,224 08
Pilotage.....	50 00	100 00	.....	.....	4,435 00	1,010 00	155 00	.....	30 30	.....	.....	.....	457 30
Towage.....	20 00	.....	1,170 00	.....	.....	.....	.....	.....	768 00	.....	.....	.....	7,383 00
Wharfage.....	13 25	5 50	10 83	16 55	75 00	27 81	19 75	.....	.....	42 49	.....	.....	20 00
Contingencies	.....	.....	.....	.....	.....	.....	.....	.....	24 84	.....	.....	33 34	269 39
Totals.....	1,219 52	1,242 33	2,485 17	2,594 18	5,746 02	2,537 22	1,514 48	699 32	4,165 93	395 88	611 74	574 91	23,786 70
Working expenses.....	1,210 17	1,242 33	2,310 59	2,027 97	5,746 02	2,537 22	1,514 48	699 32	2,116 29	395 88	305 25	226 50	20,332 02
Repairs, ordinary.....	9 35	.....	174 58	.....	.....	.....	.....	.....	144 92	.....	.....	.....	328 85
" extraordinary	.....	.....	.....	566 21	.....	.....	.....	.....	1,904 72	.....	306 49	348 41	3,125 83
Totals .....	1,219 52	1,242 33	2,485 17	2,594 18	5,746 02	2,537 22	1,514 48	699 32	4,165 93	395 88	611 74	574 91	23,786 70

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## DREDGE 'CANADA.'

Wages.....	472 68	632 58	632 00	629 61	646 70	632 00	632 00	632 00	582 67	398 00	327 00	327 00	6,474 24
Coal.....	231 27	206 34	206 34	206 38	206 38	196 57	.....	.....	290 85	105 00	104 20	104 20	1,779 61
Provisions.....	292 63	104 43	256 00	272 02	566 39	218 00	.....	60 00	379 71	111 86	349 93	349 93	2,521 98
Stores.....	30 18	91 02	54 92	238 84	461 32	28 88	24 87	.....	40 95	18 55	92 52	92 52	1,102 31
Equipment.....	.....	222 23	.....	.....	58 88	.....	.....	.....	99 88	.....	.....	.....	380 99
Water.....	.....	.....	12 24	.....	.....	3 30	.....	.....	43 60	10 00	21 00	21 00	90 14
Repairs.....	226 29	61 12	4,272 75	2,397 59	3,102 97	29 34	1,232 35	.....	568 54	338 99	354 82	354 82	13,095 06
Pilotage.....	.....	.....	.....	.....	12 55	.....	.....	.....	28 72	.....	.....	.....	41 27
Towage.....	262 50	.....	1,275 00	.....	848 00	650 00	1,100 00	.....	1,390 00	270 00	.....	.....	5,795 50
Wharfage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15 92	20 00	55 36	91 28
Contingencies.....	11 01	.....	10 32	.....	14 93	25 02	10 25	.....	10 01	.....	6 96	16 94	105 44
Totals.....	1,436 62	1,112 28	6,910 47	3,538 06	6,168 12	1,783 11	2,999 47	692 00	3,833 93	1,258 72	373 22	1,371 82	31,477 82
Working expenses.....	1,210 32	1,050 86	2,637 72	1,225 95	3,005 15	1,753 77	1,767 12	692 00	2,875 39	515 81	373 22	690 00	17,797 32
Repairs, ordinary.....	131 99	29 34	21 38	3,162 97	29 34	1,232 35	.....	.....	968 54	742 91	.....	681 82	5,565 91
" extraordinary.....	94 80	32 08	4,251 37	2,312 11	.....	.....	.....	.....	.....	.....	.....	.....	8,114 59
Totals.....	1,436 62	1,112 28	6,910 47	3,538 06	6,168 12	1,783 11	2,999 47	692 00	3,833 93	1,258 72	373 22	1,371 82	31,477 82

## DREDGE 'NEW DOMINION.'

Wages.....	690 45	980 52	779 58	477 00	475 00	475 00	475 00	474 59	446 56	505 00	500 64	493 26	6,752 60
Coal.....	.....	.....	43 07	272 76	198 26	5 00	.....	.....	93 76	131 89	131 89	243 00	987 74
Provisions.....	.....	36 80	28 27	273 45	94 93	99 75	.....	.....	226 78	306 03	.....	.....	1,160 54
Stores.....	10 31	41 64	23 80	44 87	10 71	.....	2 10	.....	4 00	.....	25 68	.....	163 11
Equipment.....	.....	75 00	153 50	.....	.....	56 13	.....	.....	10 00	.....	.....	.....	294 63
Water.....	685 66	10 00	3 30	.....	.....	.....	.....	.....	30 30	.....	.....	.....	43 50
Repairs.....	.....	.....	586 40	582 50	39 53	14 60	.....	.....	40 58	83 16	.....	.....	2,082 43
Pilotage.....	.....	25 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25 00
Towage.....	.....	210 00	930 00	780 00	750 00	810 00	.....	.....	2,610 00	125 00	2,265 00	.....	9,236 00
Wharfage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Contingencies.....	.....	.....	5 24	12 94	1 05	2 32	.....	.....	5 50	.....	8 14	8 25	48 04
Totals.....	1,386 42	1,378 96	2,537 06	2,443 52	1,371 22	1,540 71	1,445 88	476 69	3,467 48	1,019 19	2,931 35	745 11	20,743 59
Working expenses.....	.....	1,096 19	1,671 08	1,801 02	1,331 69	1,526 11	1,445 88	476 69	3,426 90	936 03	2,931 35	745 11	17,448 05
Repairs, ordinary.....	1,386 42	292 77	895 98	582 50	39 53	10 60	.....	.....	12 68	1 00	.....	.....	17 68
" extraordinary.....	.....	.....	.....	.....	.....	.....	.....	.....	27 90	82 16	.....	.....	3,277 86
Totals.....	1,386 42	1,378 96	2,537 06	2,443 52	1,371 22	1,540 71	1,445 88	476 69	3,467 48	1,019 19	2,931 35	745 11	20,743 59

9-10 EDWARD VII., A. 1910

## CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending March 31, 1909.

## DREDGE 'PRINCE EDWARD.'

Items.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	352 29	485 66	493 74	500 16	500 58	502 13	516 96	495 65	497 40	287 61	175 00	548 39	5,355 57
Coal.....			176 02	425 50	9 45	11 18	229 97						852 12
Provisions.....			248 75	160 65	106 56	134 25	29 60			507 29			1,187 16
Stores.....			84 77	28 78		170 46	61 16		485 88			106 33	937 38
Equipment.....									166 34				166 34
Water.....			89 59	45 60	46 00	45 00	5 00		46 10	7 60			284 80
Repairs.....			1,149 98		24 35	31 82	54 07				71 00	964 15	2,295 43
Towing.....	325 00	650 00	680 00	650 00	625 00	625 00	675 00		1,206 00	100 00			5,516 00
Contingencies.....			19 16			30 46				6 20		19 31	75 13
Totals.....	677 29	1,135 66	2,921 92	1,810 69	1,311 94	1,550 30	1,571 76	495 65	2,401 72	908 70	246 06	1,638 18	16,669 87
Working expensea...	677 29	1,135 66	1,771 94	1,810 69	1,287 59	1,518 48	1,517 69	495 65	2,401 72	621 09	175 00	125 64	13,538 44
Repairs, ordinary...	Nil.	Nil.	Nil.	Nil.	Nil.	26 88	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	26 58
" extraordinary	Nil.	Nil.	1,149 98	Nil.	24 35	5 24	54 07	Nil.	Nil.	287 61	71 06	1,512 54	3,164 85
Totals.....	677 29	1,135 66	2,921 92	1,810 69	1,311 94	1,550 30	1,571 76	495 65	2,401 72	908 70	246 06	1,638 18	16,669 87

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## DREDGE 'GEO. MCKENZIE.'

Wages.....	733 29	434 03	468 00	494 50	499 00	400 00	400 00	450 00	133 97	295 77	250 00	565 45	5,542 01
Coal.....	45 36	43 88		310 50	375 50	256 50	45 50		16 90	16 90		41 00	1,135 14
Provisions.....				450 93	93 27	100 08	58 16		157 94	98 14		109 19	1,067 71
Stores.....	3 30	5 41			1 00	5 25				24 30			42 26
Equipment.....			55 71						33 00				88 71
Water.....			4 80	3 50	135 41	13 00	12 00		7 50				176 21
Repairs.....	127 17		113 46	180 64	147 95	68 00	4 31		3 37	8 30		31 76	684 96
Towage.....		40 00			360 00				870 00	493 95			1,763 95
Contingencies.....	2 19		6 63			41 01	2 35		7 02		11 77		71 05
Totals.....	911 31	523 32	648 65	1,440 07	1,615 13	943 87	536 82	450 00	1,538 30	937 36	261 77	745 40	10,572 00
Working expenses.....	50 85	523 32	535 19	1,250 43	1,467 18	875 87	532 51	450 00	1,534 43	633 29	261 77	150 19	8,294 53
Repairs, ordinary.....	127 17	Nil.	Nil.	8 70	53 95	68 00	4 31	Nil.	3 37	Nil.	Nil.	Nil.	265 50
" extraordinary.....	733 29	Nil.	113 46	171 94	94 00	Nil.	Nil.		Nil.	364 07	Nil.	595 21	2,011 97
Totals.....	911 31	523 32	648 65	1,440 07	1,615 13	943 87	536 82	450 00	1,538 30	937 36	261 77	745 40	10,572 00

## DREDGE 'CAPE BRETON.'

Wages.....	421 44	510 00	510 00	510 00	494 37	507 02	510 00	510 00	1,338 04	435 54	555 39	915 02	7,217 42
Coal.....	45 50		341 25	84 50	289 77	110 20	224 25		452 58	259 64	148 65	21 25	1,577 62
Provisions.....	211 79		296 75			48 45	5 55		415 55	65 37	451 53	169 83	2,360 61
Stores.....	159 22				138 10	88 50	205 17				18 36	50 42	233 55
Equipment.....	406 75		45 00	20 00		13 25			242 48				1,141 00
Water.....	37 50		269 72		2 40	2 416 59			1,324 60	641 01			136 25
Repairs.....	2,242 77		3,000 00	1,560 00	1,560 00	1,410 00	357 82		3,764 00	1,301 54			6,837 00
Towage.....	40 00		14 37	10 04	6 73	8 60	11 36		14 72	27 11			13,013 36
Contingencies.....	73 42											5 58	172 13
Totals.....	3,658 39	510 00	4,170 46	2,648 04	2,575 87	2,138 17	3,830 39	510 00	7,551 97	2,740 71	1,173 93	1,162 10	32,679 03
Working expenses.....	1,415 62	510 00	3,960 74	2,648 04	2,573 47	2,138 17	1,422 80	510 00	6,227 37	1,664 16	1,173 93	247 08	24,491 38
Repairs, ordinary.....	2,048 87	Nil.	Nil.	2 40	2 40	Nil.	2,416 59	Nil.	1,324 60	Nil.	Nil.	Nil.	5,792 46
" extraordinary.....	193 90	Nil.	209 72	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	1,076 55	Nil.	915 02	2,395 19
Totals.....	3,658 39	510 00	4,170 46	2,648 04	2,475 87	2,138 17	3,830 39	510 00	7,551 97	2,740 71	1,173 93	1,162 10	32,679 03

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CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending March 31, 1909—*Continued.*

DREDGE 'NEW BRUNSWICK.'

ITEMS.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	207 98	363 77	376 84	384 73	370 92	445 25	680 00	416 07	187 50	80 00	80 00	255 30	3,842 36
Coal.....	.....	228 38	.....	271 01	294 28	.....	216 29	.....	290 00	.....	.....	.....	1,300 05
Provisions.....	16 63	79 06	230 04	108 17	46 42	137 98	92 93	.....	89 17	.....	.....	28 05	828 45
Stores.....	44 70	.....	97 37	.....	9 10	.....	.....	.....	.....	.....	.....	30 17	181 34
Equipment.....	.....	.....	93 30	58 54	.....	.....	.....	.....	.....	.....	.....	7 20	151 84
Water.....	.....	.....	10 00	.....	.....	67 26	.....	.....	138 25	15 80	.....	.....	17 20
Repairs.....	38 70	.....	320 50	520 00	520 00	453 43	993 69	.....	415 49	.....	.....	297 43	877 94
Towage.....	166 00	540 00	553 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,201 27
Contingencies.....	9 47	.....	9 22	3 44	2 09	0 59	1 00	.....	3 58	.....	.....	6 56	36 35
Totals.....	483 48	1,211 21	1,690 52	1,345 98	1,242 81	1,144 92	1,983 31	410 07	1,123 99	95 80	80 00	624 71	11,436 86
Working expenses.....	444 78	1,211 21	1,370 02	1,345 98	1,242 81	1,077 66	1,983 31	410 07	985 74	Nil.	Nil.	209 48	10,281 06
Repairs, ordinary.....	4 60	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	46 75	Nil.	Nil.	78 92	130 27
" extraordinary.....	34 10	Nil.	320 50	Nil.	Nil.	67 26	Nil.	Nil.	91 50	95 80	80 00	336 31	1,025 47
Totals.....	483 48	1,211 21	1,690 52	1,345 98	1,242 81	1,144 92	1,983 31	410 07	1,123 99	95 80	80 00	624 71	11,436 86



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## DREDGE 'W. S. FIELDING.'

Wages .....	1,140 09	1,187 80	1,196 46	1,267 75	1,338 97	1,208 01	1,183 76	1,202 99	1,299 29	1,301 59	1,292 00	1,231 17	14,863 79
Coal .....	1,156 00	424 60	13 76	710 46	350 80	336 63	352 51	286 60	727 09	300 00	.....	1,144 00	5,892 45
Provisions .....	196 54	.....	149 22	1,120 49	278 87	343 73	376 15	3 00	584 20	11 26	538 12	440 19	4,050 97
Stores .....	48 00	.....	57 88	272 37	125 06	714 17	224 53	.....	100 87	74 81	.....	71 24	1,680 53
Equipment .....	260 23	.....	607 05	290 46	342 84	200 66	210 50	.....	5 40	.....	.....	500 24	2,596 38
Water .....	.....	.....	388 40	148 81	124 05	89 30	116 30	.....	214 40	469 30	.....	.....	1,490 96
Repairs .....	.....	.....	640 87	948 66	142 35	2,816 66	308 06	323 94	3,202 04	916 52	77 43	1,159 41	10,670 94
Pilotage .....	.....	130 00	133 00	135 00	.....	130 00	135 00	.....	.....	.....	.....	.....	663 00
Towage .....	3 00	.....	3,081 50	.....	11,218 50	2,028 50	.....	2,180 50	.....	.....	.....	2,925 00	21,436 50
Wharfage .....	.....	79 35	.....	649 39	67 81	1,981 88	352 49	667 26	.....	523 55	.....	210 87	4,423 45
Contingencies .....	6 45	.....	10 00	13 12	58 00	12 25	.....	.....	.....	.....	.....	3 86	182 63
Totals .....	2,869 91	1,821 75	3,196 64	8,646 61	2,849 35	19,160 79	5,357 30	1,817 13	8,971 35	3,582 23	1,907 55	7,685 98	67,806 00
Working expenses .....	2,869 91	1,821 75	2,555 77	7,607 45	2,707 00	16,314 13	4,959 24	1,023 19	5,769 32	2,620 71	1,830 12	5,354 57	56,093 05
Repairs, ordinary .....	Nil.	Nil.	336 07	87 29	51 78	581 87	223 09	Nil.	3,202 04	961 52	77 43	64 96	5,586 95
" extraordinary .....	Nil.	Nil.	304 80	861 37	90 57	2,234 79	174 07	193 94	Nil.	Nil.	Nil.	2,206 45	6,125 99
Totals .....	2,869 91	1,821 75	3,196 64	8,646 61	2,849 35	19,160 79	5,357 30	1,817 13	8,971 35	3,582 23	1,907 55	7,685 98	67,806 00

## DREDGE 'MONTAGUE.'

Wages .....	581 85	500 00	510 00	505 00	505 00	505 00	505 00	505 00	436 20	238 51	235 31	548 75	5,575 02
Coal .....	.....	258 75	180 00	286 78	10 00	.....	210 38	.....	262 81	116 21	.....	190 21	1,116 12
Provisions .....	168 02	31 04	99 03	43 52	.....	722 10	66 21	.....	10 04	.....	43 32	193 91	1,570 56
Stores .....	124 02	19 00	102 02	74 93	.....	295 92	.....	.....	16 04	132 47	.....	92 16	718 69
Equipment .....	.....	.....	163 48	13 50	119 50	.....	.....	.....	.....	.....	.....	.....	828 95
Water .....	16 00	30 40	24 00	8 80	.....	71 00	.....	.....	17 60	22 56	.....	22 50	190 30
Repairs .....	430 51	.....	42 38	375 76	229 94	2,823 72	1,159 29	.....	46 00	.....	1,065 55	1,065 55	6,149 71
Pilotage .....	.....	625 00	812 50	650 00	850 00	627 00	675 00	.....	1,447 38	200 00	.....	.....	194 00
Towage .....	325 00	.....	.....	.....	.....	.....	.....	.....	88 75	.....	.....	.....	6,211 88
Wharfage .....	70 53	.....	.....	.....	.....	116 99	0 45	.....	53 80	.....	.....	62 01	88 75
Contingencies .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	303 78
Totals .....	1,715 93	1,464 79	2,333 41	1,968 29	1,714 44	5,219 73	2,616 33	505 00	2,363 18	783 54	278 63	2,115 09	22,888 36
Working expenses .....	703 57	1,464 79	2,291 03	1,592 53	1,484 50	2,306 01	1,457 04	505 00	2,363 18	570 98	278 63	408 63	15,515 89
Repairs, ordinary .....	430 51	Nil.	42 38	Nil.	Nil.	2,306 01	Nil.	Nil.	Nil.	22 56	Nil.	919 08	1,414 53
" extraordinary .....	581 85	Nil.	Nil.	375 76	229 94	2,823 72	1,159 29	Nil.	Nil.	Nil.	Nil.	787 38	5,567 94
Totals .....	1,715 93	1,464 79	2,333 41	1,968 29	1,714 44	5,219 73	2,616 33	505 00	2,363 18	533 54	278 63	2,115 09	22,888 36

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CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending March 31, 1909—Continued.

DREDGE 'NORTHUMBERLAND.'

ITEMS.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	942 87	840 00	840 00	840 00	838 60	840 00	840 00	866 00	706 69	378 52	420 00	420 00	8,772 68
Coal.....			1,262 64	1,443 25	744 50				1,416 62	86 50			4,893 51
Provisions.....		33 46	435 07	329 42	911 47	377 92	231 31		468 78	78 80			2,896 23
Stores.....	92 18	25 99	10 53	214 73	409 96	150 69			72 15	15 72		19 06	1,011 01
Equipment.....					146 79		60 35		10 00				217 14
Water.....					25 00				25 00	25 00			100 00
Repairs.....	37 50	25 55	561 78	594 46	498 78		71 21		772 62	62 76	81 56	697 54	3,403 76
Towage.....				23 00	1,535 00	1,836 00			410 00	15 00			3,839 00
Wharfage.....				80 00	30 00				15 00				125 00
Contingencies.....		52 67	1 50	33 77	78 69	13 91	3 88		3 46		49 63		300 91
Totals.....	1,072 55	977 67	3,051 52	3,558 63	5,238 79	3,245 52	1,206 75	866 00	3,900 32	662 30	550 59	1,198 60	25,529 24
Working expenses.....	899 92	952 12	2,489 74	2,964 17	4,740 61	3,245 52	1,135 54	866 00	3,127 70	221 02	469 03	Nil.	21,040 77
Repairs, ordinary.....	Nil.	25 55	34 61	Nil.	419 92	Nil.	71 21	Nil.	772 62	62 76	81 56	Nil.	1,408 23
" extraordinary.....	242 63	Nil.	527 17	594 46	78 80	Nil.	Nil.	Nil.	Nil.	378 52	Nil.	1,198 60	3,020 24
Totals.....	1,072 55	977 67	3,051 52	3,558 63	5,238 79	3,245 52	1,206 75	866 00	3,900 32	662 30	550 59	1,198 60	25,529 24

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## TUG 'HELENA.'

Wages.....	435 00	470 00	470 00	405 00	493 41	549 26	550 00	513 32	559 96	555 00	573 08	555 57	6,189 50
Caul.....			858 57	373 80	825 28	744 18		328 13		459 00			3,508 96
Provisions.....		12 34	753 36	0 60	352 82	286 48		439 61		4 20		475 69	2,325 10
Stores.....		31 90	130 48	14 63				271 42		67 29		739 29	1,255 07
Equipment.....		481 91	9 10		29 70	47 10						567 81	567 81
Water.....			65 00	10 00		1 45		10 00					231 10
Repairs.....	62 17	2 00	429 69		103 75	15 79		120 62		59 97		3,983 51	4,777 50
Towage.....										15 00			15 00
Wharfage.....			50 00										50 00
Contingencies.....		42 74		0 58	15 35			11 69		0 83			71 19
Totals.....	497 17	1,049 80	2,765 20	864 67	1,854 71	1,644 26	550 00	1,694 79	559 96	1,161 29	693 33	5,754 06	19,081 33
Working expenses.....	435 00	1,038 80	2,336 51	864 67	1,760 96	1,628 47	550 00	1,574 17	559 96	1,101 32	693 33	1,109 78	13,643 06
Repairs, ordinary.....	Nil.	2 00	15 65	Nil.	89 75	15 79	Nil.	120 62	Nil.	59 97	Nil.	Nil.	303 78
" extraordinary.....	62 17	Nil.	414 04	Nil.	14 00	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	4,044 28	5,134 49
Totals.....	497 17	1,040 80	2,765 20	864 67	1,854 71	1,644 26	550 00	1,694 79	559 96	1,161 29	693 33	5,754 06	19,081 33

## TUG 'IRONA.'

Wages.....	161 16	225 00	225 00	225 00	225 00	225 00	225 00	225 00	225 00	225 00	225 00	225 00	2,636 16
Caul.....	47 13	20 25	6 83										159 59
Provisions.....			266 02	67 84	103 15	80 67			169 35		76 38	244 67	922 70
Stores.....	98 52		14 97	0 60	43 80				27 60				215 49
Equipment.....			91 83						51 62				132 85
Repairs.....	52 52	26 41			201 90				205 97	30 60		159 14	676 54
Photage.....				6 00									6 00
Contingencies.....	6 38			2 84		6 80			4 83		11 84	5 60	38 29
Totals.....	365 71	280 66	634 65	302 28	573 85	312 47	225 00	225 00	674 77	255 60	313 22	634 41	4,797 62
Working expenses.....	313 19	254 25	634 65	302 28	371 95	312 47	225 00	225 00	468 80	Nil.	313 22	250 27	3,671 08
Repairs, ordinary.....	52 52	26 41	Nil.	Nil.	45 00	Nil.	Nil.	Nil.	205 97	Nil.	Nil.	143 39	473 29
" extraordinary.....	Nil.	Nil.	Nil.	Nil.	166 90	Nil.	Nil.	Nil.	Nil.	255 60	Nil.	240 75	633 25
Totals.....	365 71	280 66	634 65	302 28	573 85	312 47	225 00	225 00	674 77	255 60	313 22	634 41	4,797 62

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## CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending March 31, 1909—Continued.

## TUG 'HERCULES.'

ITEMS.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....				126 52	405 60	473 79	290 00	290 00	290 00	290 00	290 00	353 50	2,819 41
Coal.....				521 60			329 30					277 20	1,128 10
Provisions.....				65 83			130 17					156 78	629 82
Stores.....				181 79	89 50	91 26			179 30		73 61		521 23
Equipment.....				343 22	293 35	48 74	2 75		155 65	18 08	10 65		812 73
Water.....					35 39	21 60	39 00					127 42	812 73
Repairs.....				224 01	89 01	118 43		18 38	70 20	55 56		79 05	245 24
Towage.....							8 00		214 97			146 81	867 17
Wharfage.....					7 00				10 66			5 00	13 66
Contingencies.....					3 34								3 34
Totals.....	Nil.	Nil.	Nil.	1,462 97	927 72	764 42	799 22	308 38	929 78	363 64	374 26	1,147 31	7,068 70
Working expenses.....				1,112 44	428 36	469 99	799 22	290 00	705 81	308 68	374 26	710 50	5,189 66
Repairs, ordinary.....				Nil.		19 58	Nil.	Nil.	214 97	55 56	Nil.	7 47	297 58
" extraordinary.....				336 53	449 36	283 85	Nil.	18 38	Nil.	Nil.	Nil.	429 34	1,581 46
Totals.....	Nil.	Nil.	Nil.	1,462 97	927 72	764 42	799 22	308 38	929 78	363 64	374 26	1,147 31	7,068 70



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## CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES IN THE MARITIME PROVINCES, &amp;c.—Continued.

## DREDGE 'NEW DOMINION.'

Description of Material Dredged.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Edgings, saw-dust and gravel.....								2,910					2,910
Edgings, saw-dust and sand.....								1,670					1,670
Clay and gravel....		700		450		3,300	4,840						9,810
Clay, stone and gravel.....			10,725	4,150	4,225	2,850							3,295
Sand—ordinary.....													19,100
Sand and shells.....										3,800	3,000	8,500	2,850
Mud.....					2,400			745	3,460				15,300
Totals.....		700	10,725	4,600	6,625	6,150	4,840	5,325	5,435	3,800	3,000	8,500	6,345
													59,720

## DREDGE 'PRINCE EDWARD.'

Gravel, sand and rock.....						1,575							1,575
Clay.....						45	1,125	1,845					2,970
Clay, stone and rocks.....					1,710	900							45
Sand—ordinary.....		855	630	7,020	6,975	4,635		315					11,115
Sand and mud.....		4,455	4,815	540			2,430	270	1,012				20,885
Mud.....			1,440										5,132
Totals.....		5,310	6,885	7,560	7,785	7,155	3,555	2,430	1,012				41,692

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## DREDGE GEO. MCKENZIE

Boulders and gravel.....	.....	5,985	6,980	.....	.....	.....	.....	.....	.....	13,970
Gravel and stone.....	.....	685	2,370	.....	.....	.....	.....	.....	.....	2,955
Clay.....	.....	2,610	.....	.....	.....	.....	.....	.....	.....	2,610
Mud.....	135	360	.....	.....	.....	.....	.....	.....	.....	1,125
Totals.....	135	4,185	8,355	6,980	.....	.....	.....	.....	.....	19,660

## "CAPE BRETON."

Hard-pan, ballast and stone.....	.....	420	.....	.....	.....	.....	.....	.....	.....	420
Boulders, rock and clay.....	.....	.....	5,985	.....	.....	.....	.....	.....	.....	5,985
Clay and coal.....	.....	210	2,310	2,520	.....	.....	.....	.....	.....	210
Clay, stone and sand.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,040
Clay, stone and boulders.....	.....	2,520	4,200	6,510	.....	.....	.....	.....	.....	13,230
Totals.....	.....	3,360	12,495	9,030	.....	.....	.....	.....	.....	24,885

## "NEW BRUNSWICK."

Driving piles.....	240	680	1,770	.....	.....	.....	.....	.....	.....	2,700
Mud, sand and logs.....	.....	.....	.....	1,300	.....	.....	.....	.....	.....	17,360
Gravel, clay and mud.....	.....	550	.....	4,100	.....	.....	.....	.....	.....	5,400
Clay and gravel.....	785	2,300	3,150	.....	.....	.....	.....	.....	.....	6,285
Clay, stone and gravel.....	475	500	200	.....	.....	.....	.....	.....	.....	1,175
Sand and ordinary clay.....	.....	.....	550	3,050	4,450	.....	.....	.....	.....	8,050
Sand—very fine.....	.....	.....	.....	4,250	4,330	6,900	.....	.....	.....	16,845
Mud.....	.....	.....	.....	2,350	.....	.....	.....	.....	.....	3,650
Totals.....	1,500	4,040	5,670	12,000	11,850	11,430	11,860	3,115	.....	61,465

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## CLASSIFICATION AND QUANTITIES OF Material Removed by Dredges in the Maritime Provinces, &amp;c.—Continued.

"W. S. FIELDING."

Description of Material Dredged.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Stones and sand.....							2,250						2,250
Gravel and mud.....		30,220	16,000	17,500	30,700	43,150	10,000	10,400	6,600	10,500	6,150		143,720
Clay and stones.....	6,350											7,800	52,250
Stone, mud and gravel.....						7,400	13,800		2,575	10,200	4,500	750	39,275
Sand and ordinary mud.....	16,300		4,500	39,450	21,700								81,950
Sand—very fine.....			9,800	2,250									12,050
Mud.....		1,700		9,800			1,000	5,550	1,000				19,050
Totals.....	23,250	31,920	30,300	69,000	52,400	50,550	27,100	15,950	10,175	20,700	10,650	8,550	350,545

"MONTAGUE."

Rubbish and logs.....													1,200
Boulders, rock and sand.....			1,100				100						1,550
Mud and stone.....		1,550											15,750
Clay, stone and rock.....		900	7,000	2,800	2,150	500	1,200	2,100					5,300
Clay, stone and mud.....		600		4,200				200					1,500
Sand—ordinary and mud.....		1,900		300		1,000			300				3,500
Sand—very fine.....				2,500					550				3,650
Mud.....			5,300	2,000	8,350	8,950		450					25,050
Totals.....		4,950	13,400	11,800	11,400	10,450	1,900	2,750	850				57,500





DETAILS OF DREDGING IN THE MARITIME PROVINCES.  
During the Fiscal Year ending 31st March, 1909.

Dredge.	Locality.	Date.	Time Dredging.	Quantity. C. Yds.	Expendi- ture at Locality.	Per Cubic Yard for Local Expendi- ture.	Wintering and Re- pairs, Equipment and superintend- ence—pro rata.	Total Cost.	Per Cubic Yard for Total Expendi- ture.
			Hrs. Min.		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
St. Lawrence	Picton Bar, Picton Co., N.S.	April 28 to May 20, 1908.	53 10	7,560	2,070 14	0 27 38	1,633 21	3,703 35	0 48 98
"	Mission Point, Bonaventure Co., P. Q.	June 1 to 19 and July 15 to 28, 1908.	56 50	9,450	2,532 24	0 26 79	1,997 70	4,529 94	0 47 43
"	Bar between Mission Point and Camp- bellton, N. B.	June 20 to July 14, 1908	56 29	7,770	1,843 24	0 23 20	1,422 56	3,225 80	0 41 52
"	Oak Bay, Restigouche Co., N. B.	July 29 to Aug. 8, 1908	44 25	7,770	1,652 28	0 12 25	1,751 24	1,703 52	0 21 92
"	Traverse, "	Aug. 9 to Sept. 30, 1908	123 20	24,280	4,025 14	0 16 57	3,176 23	7,201 37	0 29 06
"	Hilyard Wharf, Dalhousie Co., N. B.	Oct. 1 to Nov. 9, 1908	76 55	15,400	1,994 94	0 12 95	1,573 78	3,568 72	0 23 17
Canada	Marine Slip, Yarmouth, Yarmouth Co., N.S.	April 18 to 25, 1908	18 20	1,700	345 39	0 30 32	706 72	1,052 11	0 70 12
"	Yarmouth, Yarmouth Co., N.S.	April 26 to June 30 and July 24 to 31, 1908	295 18	34,735	3,960 48	0 11 40	8,100 73	12,061 21	0 34 74
New Dominion	St. Andrews, New Wharf, Charlotte Co., N. B.	May 21 to Aug. 24, 1908	638 00	20,250	4,680 18	0 23 11	1,273 85	5,354 03	0 24 46
"	St. Andrews Basin, East Entrance, Charlotte Co., N. B.	Aug. 25 to Sept. 9 and Jan. 8 to Mar. 31, 1909	282 45	20,550	5,549 98	0 27 00	1,510 55	7,060 53	0 34 35
"	St. George, Charlotte Co., N. B.	Sept. 10 to Nov. 26, 1908.	397 23	12,720	4,396 70	0 34 56	1,197 27	5,593 97	0 43 98
"	L'Écluse, "	Nov. 27 to 30 and Dec. 1 to 15, 1908.	53 15	4,145	933 26	0 22 51	254 01	1,187 27	0 28 64
Prince Edward	Black Harbour, "	Dec. 16 to 28, 1908	39 00	2,035	845 50	0 41 14	229 53	1,075 12	0 52 31
"	Victoria, Capaud, Queens Co., P. E. I.	May 1 to Dec. 28, 1908.	787 46	34,695	7,181 58	0 20 70	5,914 92	13,096 51	0 37 87
Geo. McKeuzie	Pownal, Queens Co., P. E. I.	Sept. 29 to Nov. 23, 1908.	171 40	3,983	2,019 53	0 33 67	1,060 15	3,075 68	0 61 23
"	Port Mulgrave, Guysboro Co., N.S.	April 30 to May 11, 1908	7 30	3,783	371 30	0 09 94	445 34	816 64	0 21 87
"	Sherbrooke, "	May 12 to July 31, 1908	420 32	15,925	2,564 50	0 16 10	3,075 72	5,640 22	0 35 48
Cape Breton	Battery Shoal, Cape Breton Co., N. S.	May 18 to 21, 23, 26, 27 and 30 and June 1 to 15, and 2 to 26 and 29 and July 1 to 4, 8, 22, 23, 30 and 31, 1908	161 15	13,546	4,675 00	0 34 51	2,395 86	7,070 86	0 52 59
"	Lewis Wharf and Shoal Outside, Cape Breton Co., N. S.	May 19, June 27 to 30 and July 9, 10, 13 to 18, 20, 21 and 28, 1908.	80 30	11,130	2,596 51	0 23 32	1,330 44	3,926 95	0 35 29

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"	Dominion Coal Co., Wharf, Cape Breton Co., N.S.	May 22, 1908.	6 00	210	93 52	0 14 53	48 01	141 53	0 67 39
New Brunswick	Long Island, Kennebecasis River, Kings Co., N.B.	April 15 to May 23 and June 18 to 22 and Nov. 14 to 18, 1908.	329 00	5,380	1,577 07	0 29 31	454 50	2,041 57	0 37 45
"	Flewewellings Wharf, Kennebecasis River, Kings Co., N.B.	May 23 to June 2, 1908.	53 00	1,400	319 14	0 22 80	94 01	413 15	0 29 51
"	Reids Point Wharf, Kennebecasis River, Kings Co., N.B.	June 3 to 9 and Nov. 10 to 13, 1908.	78 00	980	351 92	0 35 40	103 64	455 56	0 46 48
"	Clifton Wharf, Kennebecasis River, Kings Co., N.B.	June 10 to 13, 1908.	24 00	620	157 46	0 25 40	46 60	204 06	0 32 01
"	Mosatchen Wharf, Kennebecasis River, Kings Co., N.B.	June 15 to 17, 1908.	25 00	770	129 77	0 16 85	38 12	167 80	0 21 06
"	Whitehead Wharf, Kennebecasis River, Kings Co., N.B.	June 23 to 30, 1908.	68 30	2,500	310 37	0 12 41	91 41	401 78	0 16 07
"	Murphy Wharf, Perry Point, Kennebecasis River, Kings Co., N.B.	July 1 to 9 and Nov. 5 to 7, 1908.	149 00	9,050	733 86	0 08 10	216 16	950 02	0 10 50
"	Seelys Shoal, Kennebecasis River, Kings Co., N.B.	July 20 to Oct. 15, 1908.	655 30	34,615	3,763 62	0 10 87	1,108 58	4,872 18	0 11 20
"	Hampton, Kennebecasis River, Kings Co., N.B.	Oct. 16 to Nov. 4, 1908.	123 00	6,020	1,628 05	0 25 38	450 07	1,978 12	0 32 86
"	Bothesy Kennebecasis River, Kings Co., N.B.	Nov. 19 to 20, 1908.	13 00	130	17 52	0 13 47	5 14	22 66	0 17 43
W. S. Fielding	Harbour Channel, St. John, St. John Co., N.B.	April 1 to Oct. 29 and Nov. 7 to 25 and Dec. 19 to Mar. 16, 1909.	689 37	336,870	58,140 30	0 17 26	13,403 51	71,543 84	0 21 24
"	Winter Port Berths, St. John, St. John Co., N.B.	Oct. 30 to Nov. 6 and Nov. 27 to Nov. 30 and Dec. 1 to 17, 1908.	50 35	13,675	3,080 78	0 22 53	710 25	3,791 03	0 28 17
Montague	Souris, Kings Co., P.E.I.	May 6 to 25 and Nov. 24 to 30, 1908.	113 00	5,350	1,231 26	0 23 07	2,211 22	3,445 48	0 64 40
"	McPhersons Cove, Grand River, P.E.I.	May 26 to June 11 and July 10 to 14, 1908.	140 30	7,700	1,443 40	0 18 74	2,585 30	4,029 30	0 52 33
"	Public Wharf, Amundale, P.E.I.	June 12 to July 9, 1908.	143 30	11,800	1,364 82	0 11 50	2,444 67	3,800 47	0 32 28
"	Murray River, Kings Co., N.S.	July 15 to Sept. 26, 1908.	398 30	27,550	3,453 07	0 12 07	6,257 96	9,751 03	0 35 39
"	Murray Harbour, South, Kings Co., N.S.	Oct. 15 to Nov. 23, 1908.	95 00	4,650	713 36	0 15 35	1,279 57	1,993 53	0 42 87
"	La Have River, Lunenburg Co., N.S.	April 6 to May 4, 1908.	237 00	128,086	3,287 66	0 02 56	1,120 07	4,407 73	0 63 43
Northumberland	Liverpool, Queens Co., N.S.	May 15 to July 31, 1908.	245 00	57,813	8,425 91	0 14 58	2,870 02	11,296 53	0 19 54
			7,400 16	898,579	113,630 45	0 15 49	73,099 81	217,860 26	0 24 25









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EXPENDITURE for Dredging in New Brunswick for the Thirty-seventh Year ended March 31, 1909—*Concluded.*

County.	Locality.	FOR THE THIRTY-SIXTH YEAR ENDED MARCH 31, 1908.				FOR THE YEAR 1908-9.				Total Quantity.	Total Cost.	Cost for each County
		Quantity.	Cost.		Cost for County.	Quantity.	Cost.		Cost for County.			
			Cubic yards.	\$			cts.	\$			cts.	Cubic yards.
Northumberland	Horse Shoe, Miramichi.....	208,892	55,058	36					208,892	55,058 36		
	Outer Bar ".....	29,935	7,965	31					29,935	7,965 31		
	Grand Dune ".....	37,975	10,121	67					37,975	10,121 67		
	Gordon Flats ".....	22,425	4,403	95					22,425	4,403 95		
	Negusac.....	6,300	6,969	75					6,300	6,969 75		
	Loggieville.....	13,201	4,888	04					13,201	4,888 04	89,407 69	
Queens.	Grand Lake.....	215,232	30,085	41					215,232	30,085 41		
	" McNairs Cove.....	20,440	4,322	82					20,440	4,322 82		
	Jeniseg.....	87,290	17,190	06					87,290	17,190 06		
	Washadenook.....	65,675	8,073	65					65,675	8,073 65		
	Cambridge Whf.....	2,900	1,073	31					2,900	1,073 31		
	" Ackerdlys ".....	4,840	985	20					4,840	985 20		
	" Huestie ".....	270	212	72					270	212 72		
	" Welsters ".....	5,000	704	58					5,000	704 58		
	" Robertsons ".....	5,750	422	14					5,750	422 14		
	" Colvella Creek.....	8,290	2,557	52					8,290	2,557 52		
Restigouche	Grimrose, Mid. Ground.....	12,040	3,274	99					12,040	3,274 99		
	Gagetown Creek Canal.....	45,335	7,759	97					45,335	7,759 97		
	Spoon Island.....	9,315	1,192	36					9,315	1,192 36		
	Ward's Shoal, Salmon River.....	46,625	4,993	59					46,625	4,993 59		
	Curley Shoal.....	36,925	3,369	16					36,925	3,369 16		
	Chapman & Briggs Corner.....	104,275	12,269	49					104,275	12,269 49		
	Upper Gagetown Wharf.....	1,700	1,104	90					1,700	1,104 90		
	McClure Shoal.....	39,525	4,556	66					39,525	4,556 66		
	Queens Coal Co., Newcastle.....	14,475	1,335	06					14,475	1,335 06		
	Hamstead.....	1,200	401	36					1,200	401 36		
Restigouche	Bellevue Wharf.....	1,825	929	25					1,825	929 25	106,344 20	
	Dalhousie.....	23,391	6,513	08					23,391	6,513 08		
	" McNairs Contract.....	13,390	1,825	67					13,390	1,825 67		
	" Railway Wharf.....	8,490	1,263	48					8,490	1,263 48		
	" Ferry Landing.....	12,992	3,632	33					12,992	3,632 33		
	" Billiards.....	3,850	1,277	78					3,850	1,277 78		
Traverse.	Traverse.....	118,890	22,980	63					118,890	22,980 63		
	" "	2,100	1,020	58					2,100	1,020 58		
Campbellton, Gov't.	Oak Bay.....	31,500	10,795	74					31,500	10,795 74		
	" Wharf.....											



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[illegible]

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## EXPENDITURE for Dredging in Prince Edward Island for the Thirty-seventh Year ended March 31, 1909.

County.	Locality.	TOTAL FOR THE THIRTY-SIX YEARS ENDED MARCH 31, 1908.				FOR THE YEAR, 1908-1909.				Total Quantity.	Total Cost.	Cost for each County	
		Quantity.		Cost.		Quantity.	Cost.	Cost for County.					
		Cubic yards.	\$	cts.	\$	cts.	Cubic yards.	\$	cts.	\$	cts.	\$	cts.
Kings	Grand River .....	76,170	15,304	04		7,700	4,029	30		83,870	15,304	04	
	Montague River .....	182,295	36,547	47						182,295	36,547	47	
	Murray Harbour South .....	101,253	18,147	03		4,650	1,968	53		105,903	20,140	56	
	Sturgeon .....	16,026	6,066	27						16,026	6,066	27	
	St. Marys Wharf .....	21,963	4,752	55						21,962	4,752	55	
	Georgetown Railway Wharf .....	1,062	408	32						1,062	408	32	
	Queens Wharf .....	2,205	1,328	80						2,205	1,328	80	
	Cardigan Bridge .....	35,955	8,619	36						35,955	8,619	36	
	Newport .....	3,240	917	82						3,240	917	82	
	Souris .....	54,575	17,345	68		5,350	3,445	48		59,925	20,791	16	
	Murray River .....	43,447	11,985	49		27,550	9,751	03		70,997	21,736	52	
	Murray Railway .....	5,926	1,860	30						5,926	1,860	30	
	Morrell .....	43,335	11,972	59						43,335	11,972	59	
	Annapdale Public Wharf .....	125,391	33,956	60		11,840	3,809	47	23,028	81	11,840	3,809	47
	Charlotteville Ry. Wharf .....	48,255	10,850	70		5,985	3,675	68		125,391	33,956	60	
Queens	Pownal .....	10,075	2,008	99						54,220	14,536	38	
	Ferry .....	13,113	5,491	77						10,075	2,008	99	
	Stean Nav. Co. ....	9,978	4,469	68						13,113	5,491	77	
	Connolly Whf. ....	13,995	5,856	02						9,978	4,469	68	
	Peake Bros .....	3,915	1,109	03						13,995	5,856	02	
	Queen St. Slip .....									3,915	1,109	03	
	George Peake Wharf .....	6,885	2,292	03						6,885	2,292	03	
	Poole Wharf .....	12,240	1,669	95						12,240	1,669	95	
	McMillan .....	6,165	1,320	13						6,165	1,320	13	
	Donn. Building .....												
	Sewer .....	5,355	1,146	68						5,355	1,146	68	
	Pub. Sewerage .....	2,880	679	12						2,880	679	12	
	Geo. Fulla Whf. ....	11,520	3,001	96						11,520	3,001	96	
	Carvell Bros .....	2,880	738	04						2,880	738	04	
	Falcon wood .....												
Pownal	Avonham Whf. ....	17,415	5,188	61						17,415	5,188	61	
	Webster's Corner, East River .....	203	43	47						203	43	47	
	Crapaud, Victoria .....	149,505	47,548	33						149,505	47,548	33	
	Pownal Bay .....	43,465	10,380	28		34,065	13,036	51		43,465	10,380	28	

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Rock Point.....	82,920	13,426 13	82,920	13,426 13
Vernon River.....	25,240	8,292 85	25,240	8,292 85
Wood Islands.....	8,405	11,801 57	8,405	11,801 57
Nine Mile Creek.....	31,630	6,296 46	31,630	6,296 46
Hickey Wharf.....	750	150 51	750	150 51
Carrs Point.....	12,165	2,441 28	12,165	2,441 28
Pinette.....	3,825	756 24	3,825	756 24
Fort Augustus.....	3,195	631 68	3,195	631 68
Southport Ferry.....	45,300	45,300	45,300	45,300
Red Point.....	7,161	7,161	7,161	7,161
North Rustico.....	13,536	3,879 60	13,536	3,879 60
South Rustico.....	11,649	4,775 38	11,649	4,775 38
Gauthiers Creek.....	17,447	4,109 67	17,447	4,109 67
Malpeque.....	28,575	8,305 50	28,575	8,305 50
French River.....	41,671	17,847	41,671	17,847
Bay View.....	4,065	3,483 32	4,065	3,483 32
Wedlocks.....	1,260	13,311 46	1,260	13,311 46
Bellfast, Hallidays Wharf.....	15,435	1,912 87	15,435	1,912 87
Marine and Fisheries Wharf.....	11,610	1,260	11,610	1,260
Summerside.....	91,571	4,468 78	91,571	4,468 78
Hurda Point Pier.....	65,505	16,772 19	65,505	16,772 19
Tignish.....	11,387	11,610	11,387	11,610
Casumpe.....	1,157	28,032 51	1,157	28,032 51
Cote Traverse.....	16,740	14,315 47	16,740	14,315 47
Holmans Wharf.....	9,585	11,387	9,585	11,387
Totals.....	1,633,838	1,157	1,633,838	1,157
		16,740		16,740
		9,585		9,585
		62,266 95		62,266 95
		39,801 00		39,801 00
		97,730		97,730
		435,223 48		435,223 48
		1,674,518		1,674,518
		475,024 48		475,024 48
		254,473 00		254,473 00
		62,266 95		62,266 95
		475,024 48		475,024 48

## EXPENDITURE for Dredging in Quebec for the Thirty-seventh Year ended March 31, 1909.

From Appropriations Maritime Provinces.

Magdalen Isl'ds.....	6,800	2,392 92	6,800	2,392 92
Co. Gaspé.....	495	242 05	495	242 05
House Harbour.....	2,587	825 47	2,587	825 47
Amherst Harbour.....	8,123	3,997 59	8,123	3,997 59
River du Loup.....	7,500	2,935 76	7,500	2,935 76
Tenimoonata.....		9,450		9,450
Rimouski.....		4,559 94		4,559 94
Mission Point.....		7,770		7,770
Bonaventure.....		3,225 80		3,225 80
Bar between Mission Point and Campbellton.....		7,755 74		7,755 74
		10,393 79		10,393 79
		17,220		17,220
		7,755 74		7,755 74
		42,785		42,785
		18,149 53		18,149 53
		2,634 97		2,634 97
		825 47		825 47
		3,997 59		3,997 59
		7,465 70		7,465 70
		10,691 50		10,691 50
		19,149 53		19,149 53

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STATEMENT of Dredging in the Maritime Provinces, showing quantities removed by and expenditure of each dredge during the thirty-seven years ended March 31, 1909.

Dredge.	TOTAL QUANTITIES AND COST FOR THIRTY-SIX YEARS ENDING MARCH 31, 1908.				FOR THE YEAR 1908-9.				TOTAL FOR THIRTY-SEVEN YEARS ENDING MARCH 31, 1909.			
	Total Quantity.		Cost.		Quantity.		Cost.		Total Quantity.		Total Cost.	
	Cub. yds.	\$ cts.	\$ cts.	\$ cts.	Cub. yds.	\$ cts.	\$ cts.	\$ cts.	Cub. yds.	\$ cts.	\$ cts.	Cost per Cubic Yard.
St. Lawrence.....	1,775,254	460,335 14	0 25 93	13,377 98	72,240	2,935 80	0 15 44	856,749	1,847,494	473,713 12	0 25 64	
Canada.....	1,297,194	376,745 74	0 31 20	4,365 87	36,435	7,365 63	0 99 59	1,026,405	1,243,629	381,651 61	0 36 62	
New Dominion.....	1,931,690	343,174 64	0 17 76	16,405 71	59,729	8,888 78	0 17 27	538,065	1,991,419	359,680 35	0 18 45	
Prince Edward.....	1,526,278	410,490 21	0 26 89	9,197 12	40,680	61,224 08	0 17 46	128,250	1,566,958	419,687 33	0 26 78	
(Old) Cape Breton.....	534,938	139,074 33	0 25 99	.....	.....	.....	.....	.....	534,938	139,074 33	0 25 99	
Gro. McKenzie.....	836,989	354,550 31	0 42 35	19,760	2,935 80	0 15 44	.....	.....	836,989	354,550 31	0 41 72	
Cape Breton.....	1,001,520	184,071 20	0 18 37	94,885	7,365 63	0 99 59	.....	.....	1,096,405	191,436 23	0 18 65	
New Brunswick.....	486,000	97,812 46	0 20 09	51,465	8,888 78	0 17 27	.....	.....	538,065	106,701 24	0 19 45	
W. S. Fielding.....	417,890	76,060 14	0 18 29	350,545	61,224 08	0 17 46	.....	.....	767,035	137,221 92	0 17 86	
Montague.....	71,290	23,941 21	0 33 62	57,650	8,249 51	0 14 46	.....	.....	128,250	32,190 72	0 25 88	
Northumberland.....	327,296	17,825 59	0 05 44	185,839	11,713 57	0 06 39	.....	.....	513,195	29,359 16	0 05 75	
Loggieville (contract).....	13,201	4,868 04	0 37 62	.....	.....	.....	.....	.....	13,201	4,868 04	0 37 62	
	10,120,569	2,488,879 01	0 24 57	143,660 45	898,579	.....	0 24 25	11,028,138	2,632,539 46	.....	0 25 87	

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STATEMENT of Dredging performed by hand in the Maritime Provinces, showing quantities removed and expenditure at each locality for the thirty-seventh year ended March 31, 1909.

Locality.	TOTAL QUANTITIES AND COST FOR THIRTY-SIX YEARS ENDING MARCH 31, 1908.				FOR THE YEAR 1908-9.				TOTAL FOR THIRTY-SEVEN YEARS ENDING MARCH 31, 1909.			
	Total Quantity.		Cost.		Quantity.		Cost.		Total Quantity.		Cost.	
	Cub. yds.	\$ cts.	\$ cts.	\$ cts.	Cub. yds.	\$ cts.	\$ cts.	\$ cts.	Cub. yds.	\$ cts.	\$ cts.	Cost per Cubic Yard.
Parrsboro', N. S.	42,595	12,804 68	0 38 06	.....	.....	.....	.....	.....	42,595	12,804 68	0 30 06	0 30 06
Windsor, N. S.	5,450	1,627 60	0 29 86	.....	.....	.....	.....	.....	5,450	1,627 60	0 29 86	0 29 86
Milton, N. S.	663	459 46	0 73 33	.....	.....	.....	.....	.....	663	459 46	0 73 33	0 73 33
Racquette..	1,645	496 38	0 30 17	.....	.....	.....	.....	.....	1,645	496 38	0 30 17	0 30 17
	50,353	15,428 12	0 30 64	.....	.....	.....	.....	.....	50,353	15,428 12	0 30 64	0 30 64

9-10 EDWARD VII., A. 1910

STATEMENT of Dredging showing Quantities removed in each Province and Cost of each Work for the Thirty-seventh Year ended March 31, 1909.

Fiscal Year.	NEW BRUNSWICK.		NOVA SCOTIA.		QUEBEC.		PRINCE EDWARD ISLAND.		Total Quantity.	Total Expenditure.	Cost per Cubic Yard.
	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.			
1872-3.	Cubic yds.	\$ cts.	Cubic yds.	\$ cts.	Cubic yds.	\$ cts.	Cubic yds.	\$ cts.	Cubic yds.	\$ cts.	\$ cts.
1873-4.	38,060	13,240 50	23,260	8,422 70	6,800	2,392 92	61,320	21,633 20	121,251	73,834 10	0 25-398
1874-5.	57,725	14,395 57	18,600	6,545 61			83,125	28,125 77	121,251	40,416 77	0 28-71
1875-6.	79,335	17,325 05	24,416	13,288 83			18,655	9,892 89	270,355	49,818 22	0 33-354
1876-7.	91,975	17,400 62	31,975	13,288 83			58,258	10,891 80	270,355	70,746 91	0 23-594
1877-8.	127,785	23,161 90	127,785	34,846 74			74,460	12,758 27	270,355	64,943 04	0 23-983
1878-9.	81,070	25,323 92	106,857	29,607 59			82,800	12,011 18	270,355	64,943 04	0 21-951
1879-80.	132,555	27,400 22	116,397	28,297 59			46,400	9,164 07	270,355	64,943 04	0 28-197
1880-1.	63,540	16,581 79	127,684	34,765 84	763	374 08	36,300	12,674 98	270,355	64,943 04	0 25-252
1881-2.	44,315	12,385 85	87,118	23,001 64	2,317	673 44	46,335	9,298 53	270,355	64,943 04	0 25-331
1882-3.	79,640	18,926 87	59,566	33,363 71			47,325	9,356 37	270,355	64,943 04	0 25-890
1883-4.	48,065	13,422 70	143,616	32,996 93			68,535	11,080 37	270,355	64,943 04	0 25-957
1884-5.	47,058	17,103 38	137,500	49,050 58			79,770	13,355 05	270,355	64,943 04	0 23-242
1885-6.	128,997	24,460 35	76,164	25,250 73			268,339	62,396 68	270,355	64,943 04	0 32-703
1886-7.	68,565	14,574 63	68,790	21,482 05			142,432	46,706 34	270,355	64,943 04	0 33-56
1887-8.	69,440	11,152 80	53,400	25,621 19			128,977	43,298 79	270,355	64,943 04	0 27-29
1888-9.	50,152	9,252 50	84,175	29,837 60			138,102	45,060 00	270,355	64,943 04	0 30-71
1889-90.	86,008	20,344 93	59,783	22,821 53			177,273	54,451 87	270,355	64,943 04	0 30-253
1890-1.	96,388	20,375 06	61,698	22,821 53			177,273	54,451 87	270,355	64,943 04	0 32-249
1891-2.	75,923	29,592 85	81,963	27,376 08			188,358	60,757 27	270,355	64,943 04	0 26-44
1892-3.	108,035	29,742 20	40,834	18,125 58			215,354	56,980 67	270,355	64,943 04	0 31-46
1893-4.	77,505	21,564 27	59,581	28,664 99			198,622	62,408 50	270,355	64,943 04	0 26-38
1894-5.	56,715	13,630 11	105,403	32,292 70			213,258	56,261 71	270,355	64,943 04	0 27-65
1895-6.	98,905	21,332 63	36,428	15,828 89			10,957 62	371,493	270,355	64,943 04	0 19-73
1896-7.	93,975	34,050 86	84,735	22,090 46			33,000	10,269 93	270,355	64,943 04	0 18-31
1897-8.	187,325	27,611 17	147,085	31,497 57			51,078	10,701 41	270,355	64,943 04	0 23-50
1898-9.	103,058	23,315 82	155,510	36,638 81			51,040	13,283 71	270,355	64,943 04	0 25-41
1899-1800.	175,935	28,232 46	152,033	37,589 22			94,364	17,537 73	270,355	64,943 04	0 26-91
1900-1.	202,369	32,615 20	94,557	36,141 97			26,020	18,984 13	270,355	64,943 04	0 20-69
1901-2.	218,210	28,508 97	145,142	39,247 35			55,345	16,166 95	270,355	64,943 04	0 21-97
1902-3.	157,297	36,193 40	134,648	32,856 93			40,560	13,775 37	270,355	64,943 04	0 22-49
1903-4.	252,725	50,060 12	94,673	31,171 45			33,030	17,123 82	270,355	64,943 04	0 21-58
1904-5.	193,955	46,448 89	293,460	33,359 47			60,683	11,089 96	270,355	64,943 04	0 31-96
1905-6.	224,058	52,649 89	271,657	36,111 20			53,615	19,047 37	270,355	64,943 04	0 18-21
1906-7.	120,065	31,538 51	176,321	61,284 54			100,740	32,504 80	270,355	64,943 04	0 25-97
1907-8.	233,557	58,576 46	792,878	112,615 07			97,730	38,801 00	270,355	64,943 04	0 24-56
1908-9.	519,190	120,186 39	274,448	50,117 13			1,731,568	475,091 80	270,355	64,943 04	
	4,968,601	985,625 03	4,613,072	1,194,059 31	42,785	18,149 53	11,050,046	2,713,236 86			



9-10 EDWARD VII., A. 1910

Cost at localities dredged in the Maritime Provinces during the fiscal year ending March 31, 1909

Dredge.	Locality.	Date.	Time Dredging.	Quantity. C. yds.	Cost. \$ cts.	Cost per Cubic Yard \$ cts.
St. Lawrence.	Pictou Bar, Pictou Co., N.S.	April 28 to May 20, 1908	53 10	7,560	2,070 14	0 27 38
	Mission Point, Bonaventure Co., Que.	June 1 to 19, and July 15 to 28, 1908.	56 50	9,450	2,532 24	0 26 79
	Bar between Mission Point and Campbellton, N.B.	June 20 to July 14, 1908.	56 20	7,770	1,803 24	0 23 20
	Oak Bay, Restigouche Co., N.B.	July 25 to Aug. 8, 1908.	44 25	7,770	4,052 28	0 12 25
	Traverse, Restigouche Co., N.B.	Aug. 9 to Sept. 30, 1908.	123 20	24,290	4,023 14	0 16 57
Canada.	Hillyards Wharf, Dalhousie, Restigouche Co., N.B.	Oct. 1 to Nov. 9, 1908.	76 55	15,400	3,994 94	0 12 35
	Maime slip, Yarmouth, Yarmouth Co., N.S.	April 18 to 25, 1908.	18 20	1,700	345 39	0 20 32
	Yarmouth, Yarmouth Co., N.S.	April 26 to June 30, and July 24 to 31, 1908.	265 18	34,735	3,969 48	0 11 40
	St. Andrews, New Wharf, Charlotte Co., N.B.	May 21 to Aug. 24, 1908.	638 00	20,250	4,680 18	0 23 11
	St. Andrews Basin, East Entrance, Charlotte Co., N.B.	Aug. 25 to Sept. 9, and Jan. 8 to Mar. 31, 1909.	282 45	29,550	5,549 98	0 27 00
Prince Edward.	St. George, Charlotte Co., N.B.	Sept. 10 to Nov. 26, 1908.	397 23	12,720	4,306 70	0 34 56
	L'Écluse, Charlotte Co., N.B.	Nov. 27 to 30, and Dec. 1 to 15, 1908.	53 15	4,145	933 26	0 22 51
	Black Harbour, Charlotte Co., N.B.	Dec. 16 to 28, 1908.	39 00	2,055	845 59	0 41 14
	Pownal, Queens Co., P.E.I.	May 1 to Sept. 28, 1908.	787 46	34,685	7,181 50	0 20 70
	Port Mulgrave, Guysboro Co., N.S.	Sept. 29 to Nov. 23, 1908.	171 40	5,985	2,015 33	0 33 47
Geo. McKenzie.	Sherbrooke, Guysboro Co., N.S.	April 30 to May 11, 1908.	70 30	3,735	371 30	0 09 94
	Battery Shoal, Cape Breton Co., N.S.	May 12 to July 31, 1908.	420 32	15,525	2,564 50	0 16 10
		May 18 to 21, 23, 26, 27, and July 1 to 4, 8, 22, 23, 30 and 31, 1908.				
		May 19 and 27 to June 30, and July 9, 10, 13 to 18, 20, 21 and 29, 1908.				
		May 22, 1908.				
Cape Breton.	Lewis Wharf and Shoal, Outside, Cape Breton Co., N.S.	April 15 to May 23; June 18 to 22, and Nov. 14 to 18, 1908.	161 15	13,545	4,675 00	0 34 51
	Dominion Coal Co. wharf, Cape Breton Co., N.S.	May 23 to June 2, 1908.	80 30	11,130	2,506 51	0 23 32
	Long Island, Kennecott River, Kings Co., N.B.	June 3 to 9, and Nov. 10 to 13, 1908.	6 00	210	93 52	0 44 53
	Floeswelling Wharf, "	June 10 to 13, 1908.	320 00	5,380	1,577 07	0 29 31
	Reida Point, "	June 13 to 17, 1908.	63 00	1,400	319 14	0 22 80
New Brunswick.	Clifton, "	June 23 to 30, 1908.	78 00	1,980	351 92	0 35 90
	Moss Glen, "	July 1 to 9, and Nov. 5 to 7, 1908.	24 00	620	157 46	0 25 40
	Whithead, "	July 20 to Oct. 15, 1908.	265 00	770	139 77	0 16 85
	Murphys Wharf, Perry Point, Sealys Shoal, Kennecott River, "	Oct. 16 to Nov. 4, 1908.	68 30	2,500	310 37	0 12 41
	Hampton, "	Nov. 19 and 20, 1908.	149 00	9,050	773 86	0 08 10
W. S. Fielding.	Rothsay, "	April 1 to Oct. 29; Nov. 7 to 25, and Dec. 19 to Mar. 16, 1909.	655 30	34,050	8,763 62	0 10 67
	Harbour Channel, St. John, St. John Co., N.B.		123 00	6,020	1,525 03	0 25 38
			13 00	130	17 52	0 13 47
			689 37	336,870	58,140 30	0 17 26



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	Winter Port Berths,	"	"	Oct. 30 to Nov. 6 and 27 to 30, and Dec. 1 to 17, 1908.	50 35	13,675	3,680 78	0 22 53
Montague.	Souris, Kings Co., P. E. I.			May 6 to 25, and Nov. 24 to 30, 1908.	113 00	5,350	1,234 26	0 23 07
19—	McPheersons Cove, Grand River, P. E. I.			May 26 to June 11, and July 10 to 14, 1908.	140 30	7,700	1,443 40	0 18 74
iv—	Public Wharf, Amundale, P. E. I.			June 12 to July 9, 1908.	143 30	11,800	1,364 82	0 11 56
	Murray River, Kings Co., P. E. I.			July 12 to Sept. 26, 1908.	398 30	27,550	3,493 07	0 12 67
	Murray Harbour South, Kings Co., P. E. I.			Oct. 15 to Nov. 23, 1908.	25 00	4,650	713 05	0 15 35
Northumberland	La Have River, Lunenburg Co., N. S.			April 6 to May 14, 1908.	237 00	128,085	3,287 65	0 02 16
15—	Liverpool, Queens Co., N. S.			May 15 to July 31, 1908.	245 00	57,813	8,425 91	0 11 58

9-10 EDWARD VII., A. 1910

Cost at various localities dredged by the Departmental Dredges during the Fiscal Year ending March 31, 1909.

## 'ST. LAWRENCE.'

Locality.	Date.	Actual Dredging Time.	Quantity.	Cost.	Cost per Cubic Yard.
		Hrs. Min.	Yds.	\$ cts.	cts.
Pieton Bar, Pieton, Pieton Co., N.S.	April 28 to May 20, 1908 ..	53 10	7,560	2,070 14	27 38
Mission Point, Bonaventure Co., P.Q.	June 1 to 13, and July 15 to 28, 1908 ..	56 50	9,450	2,532 24	26 79
Bar between Mission Point and Campbellton, N.B.	June 20 to July 14, 1908 ..	56 20	7,770	1,803 24	23 20
Oak Bay, Restigouche Co., N.B.	July 29 to Aug. 8, 1908 ..	44 25	7,770	952 28	12 25
Traverse, Restigouche Co., N.B.	Aug. 9 to Sept. 30, 1908 ..	123 20	24,290	4,025 14	16 57
Hillyards Wharf, Dalhousie, Restigouche Co., N.B.	Oct. 1 to Nov. 9, 1908 ..	76 55	15,400	1,994 94	12 95

## 'CANADA.'

Marine Slip, Yarmouth, Yarmouth Co., N.S.	April 18 to 25, 1908 ..	18 20	1,700	345 39	20 32
Yarmouth, Yarmouth Co., N.S.	April 26 to June 30, and July 24 to 31, 1908 ..	205 18	34,735	3,960 48	11 40

## 'NEW DOMINION.'

St. Andrews, New Wharf, Charlotte Co., N.B.	May 21 to Aug. 24, 1908 ..	638 00	20,250	4,680 18	23 11
St. Andrews Basin, East Entrance, N.B.	Aug. 25 to Sept. 9, and Jan. 8 to March 31, 1909 ..	282 45	20,550	5,549 98	27 00
St. George, Charlotte Co., N.B.	Sept. 10 to Nov. 26, 1908 ..	397 23	12,720	4,396 70	34 56
L'Etéte, Charlotte Co., N.B.	Nov. 27 to 30, and Dec. 1 to 15, 1908 ..	53 15	4,145	933 26	22 51
Black Harbour, Charlotte Co., N.B.	Dec. 16 to 28, 1908 ..	39 00	2,055	845 59	41 14

## 'PRINCE EDWARD.'

Victoria Crapsaud, Queens Co., P.E.I.	May 1 to Sept. 28, 1908 ..	787 46	34,685	7,181 59	20 70
Pownal, Queens Co., P.E.I.	Sept. 29 to Nov. 23, 1908 ..	171 40	5,985	2,015 53	33 67

## 'GEO. McKENZIE.'

Port Mulgrave, Guysboro, Co., N.S.	April 30 to May 11, 1908 ..	70 30	3,735	371 30	09 94
Sherbrooke, Guysboro, Co., N.S.	May 12 to July 31, 1908 ..	420 32	15,925	2,564 50	16 10

## SESSIONAL PAPER No. 19

Cost at various localities dredged by the Departmental Dredges, &c.—*Continued.*

## 'CAPE BRETON.'

Locality.	Date.	Actual Dredging Time.	Quantity.	Cost.	Cost per Cubic Yard.
		Hrs. Min.	Yds.	\$ cts.	cts.
Battery Shoal, Cape Breton Co., N.S. ....	May 18 to 21, 23, 26, 27 and 30, and June 1 to 15, 20 to 26 and 29, July 1 to 4, 8, 22, 23, 30 and 31, 1908..	161 15	13,545	4,675 00	34·51
Lewis Wharf, and Shoal outside, N.S. ....	May 19 and 20, June 27 and 30, July 3, 10, 13 to 18, 20, 21 and 23, 1908 .....	80 30	11,130	2,596 51	23·32
Dominion Coal Co. Wharf, N.S. ....	May 22, 1908. ....	6 00	210	93 52	44·53

## 'NEW BRUNSWICK.'

Long Island, Kennebecasis River, Kings Co., N.B. ....	April 15 to May 23, June 18 to 22, Nov. 14 to 18, 1908	320 00	5,380	1,577 07	29·31
Flewwelling Wharf, Kennebecasis River, Kings Co., N.B. ....	May 25 to June 2, 1908. ....	63 00	1,400	319 14	22·80
Reids Point Wharf, Kennebecasis River, Kings Co., N.B. ....	June 3 to 9 and Nov. 10 to 13, 1908. ....	78 00	980	351 92	35·90
Clifton Wharf, Kennebecasis River, Kings Co., N.B. ....	June 10 to 13, 1908. ....	24 00	620	157 46	25·40
Moss Glen, Kennebecasis River, Kings Co., N.B. ....	June 15 to 17, 1908. ....	25 00	770	129 77	16·85
Whitehead Wharf, Kennebecasis River, Kings Co., N.B. ....	June 23 to 30, 1908. ....	68 30	2,500	310 37	12·41
Murphy Wharf, Perry Point, Kennebecasis River, Kings Co., N.B. ....	July 1 to 9, and Nov. 5 to 7, 1908. ....	149 00	9,050	733 86	08·10
Sealy's Shoal, Kennebecasis River, Kings Co., N.B. ....	July 20 to Oct. 15, 1908. ....	655 30	34,615	3,763 62	10·87
Hampton, Kennebecasis River, Kings Co., N.B. ....	Oct. 16 to Nov. 4, 1908. ....	123 00	6,020	1,528 05	25·38
Rothsay, Kennebecasis River, Kings Co., N.B. ....	Nov. 19 to 20, 1908. ....	13 00	130	17 52	13·47

## 'W. S. FIELDING.'

Harbour Channel, St. John, St. John Co., N.B. ....	April 1 to Oct. 29, and Nov. 7 to 25, 1908, and Dec. 19 to Mar. 16, 1909. ....	689 37	336,870	58,140 30	17·26
Winter Port Berths, St. John, St. John Co., N.B. ....	Oct. 30 to Nov. 6, and 27 to 30, and Dec. 1 to 17, 1908. ....	50 35	13,675	3,080 78	22·53

## 'MONTAGUE.'

Souris, Kings Co., P.E.I. ....	May 6 to 25, and Nov. 24 to 30, 1908. ....	113 00	5,350	1,234 26	23·07
McPhersons Cove, Grand River, P.E.I. ....	May 26 to June 11, and July 10 to 14, 1908. ....	140 30	7,700	1,443 40	18·74
Public Wharf, Annandale, P.E.I. ....	June 12 to July 9, 1908. ....	143 30	11,800	1,364 82	11·56
Murray River, Kings Co., P.E.I. ....	July 15 to Sept. 26, 1908. ....	389 30	27,550	3,493 07	12·67
Murray Harbour South, P.E.I. ....	Oct. 15 to Nov. 23, 1908. ....	95 00	4,650	713 96	15·35

## 'NORTHUMBERLAND.'

LaHave River, Lunenburg Co., N.S. ....	April 6 to May 14, 1908. ....	237 00	128,086	3,287 66	02·56
Liverpool, Queens Co., N.S. ....	May 15 to July 31, 1908. ....	245 00	57,813	8,425 91	14·58

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## PROVINCE OF QUEBEC.

## BECANCOUR.

The dredge *Hercules* worked at this place between June 29 and November 17, 1908, and the dredging consisted in cleaning out the cuts made along the bank in the basin the previous season. There being no wharf, boats have to unload on shore. Six cuts were made, each 700 feet long, and two cuts, 2,000 feet long each, to a width of 20 feet.

## CHICOT RIVER (BERTHIER).

Departmental dredge *St. Louis* worked at this place between October 5 and November 9, 1908, making 3 cuts, 640 feet long and 25 feet wide each, at the entrance of this river, for the purpose of loading hay and grain barges. Some 7,440 cubic yards of clay and sand were removed.

## CHICOUTIMI.

The dredge *Algonquin*, belonging to the General Construction Company, worked at this place between July 18 and November 14, 1908. The dredging performed was at the wharf in the harbour. The site for the extension of the wharf was dredged to 15 feet and the approach to the said wharf was dredged to 22 feet. Some 64,615 cubic yards of gravel and sand were removed.

## CHATEAUGUAY.

Dredge No. 2, Dominion Dredging Company, worked at this place between June 9 and November 10, 1908, and the dredging done consisted in deepening and widening the channel at the mouth of the Chateauguay river, also opposite Ross' Point, so as to give a better channel for the general traffic of boats. Seven cuts were made to a width of 20 feet and a length each of two of 1,600, two of 800, and three of 1,000 feet. Some 57,221 cubic yards of clay, gravel and sand were removed.

## DORION.

Dredge *Canada*, belonging to L. Cohen & Son, worked at this place between October 5 and November 26, 1908, and also dredge *Hercules*, belonging to L. Cohen & Son, between June 1 and 15, 1908. Two cuts were made, 500 and 240 feet long and 30 feet wide, for the purpose of making an approach to the basin. Some 9,695 cubic yards of clay, sand and rock were removed.

## FASSETT.

Departmental dredge *Nipissing* worked at this place between July 27 and August 15, 1908, making three cuts alongside the wharf, 348, 111 and 434 feet long and 30 feet wide. The water was deepened to allow boats to arrive at the wharf with more facility. Some 13,455 cubic yards of sand and clay were removed.

## GATINEAU RIVER.

From June 13 to July 25, 1908, dredge *Nipissing*, belonging to the Department of Public Works, worked at this place making seven cuts, 199, 215, 222, 278, 194 and 123 feet long, with a width of 30 feet. The nature of this work was the removing of a sand shoal which obstructed the channel. About 17,640 cubic yards of clay and sand were removed.

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## GODEFROY RIVER.

Dredge *St. Pierre*, belonging to Antoine St. Pierre, worked at this place, from September 1 to 9, 1908, and from October 5 to November 14, 1908, removing 60,825 cubic yards of sand and clay. Three cuts were made, 1,000, 1,500 and 810 feet long and 30 feet wide, deepening in front of the government wharf.

## GREEN SHOALS.

Departmental dredge *Nipissing* worked at this place between November 16 and 21, 1908, making two cuts, 63 feet and 30 feet long and 30 feet wide, in the main channel, to remove material which had fallen in the channel. Some 90 cubic yards of clay and sand were removed.

## ILE AUX FOINS.

Dredge *Little Giant*, belonging to L. Cohen & Son, worked at this place from May 27 to September 25, 1908, making three cuts, two 6,000 feet and one 3,500 feet long and 24 feet wide, for the purpose of removing a shoal which had formed in the main channel. About 87,155 cubic yards of clay, sand and quicksand were removed.

## ILE AUX NOIX.

Departmental dredge *Richelieu* worked at this place from June 9 to September 25, 1908. Work was performed for the purpose of deepening and cleaning out alongside the wharf. Seven cuts were made, 125, 135, 52, 40, 120, 80 and 90 feet long, all to a width of 20 feet. Three cuts were made, deepening the channel at the mouth of the Johnston river, 95, 40 and 100 feet long and 20 feet wide. One cut, 250 feet long and 20 feet wide, was also made opposite Gosselin's hotel, leading into main channel. Some 27,750 cubic yards of clay, and sand were removed.

## ILE PERROT.

From July 18 to August 10, 1908, dredge *Oneida*, belonging to L. Cohen & Son, worked at this place, making three cuts, 150 feet long and three cuts 75 feet long and 25 feet wide, near the powder factory wharf. This was the cleaning up of the channel made the previous season, which had partly filled in at places. About 6,045 cubic yards of sand, clay and stones were removed.

## LAKE ST. JOHN.

*Dredging.*

Dredging at Roberval, Lake St. John, Chicoutimi county, is done by dredge *Lac St. Jean*, assisted by tug *Marie-Louise*.

The dredge *Lac St. Jean* is of the following dimensions: Length over all, 75 feet; width, 25 feet; draft, 2½ feet; greater working depth, 18 feet.

During the fiscal year 1908-9, the dredge was employed at Roberval, working in the harbour. Material removed, 13,585 cubic yards; expenditure, \$4,495.39.

During the winter, the dumping scows and tug *Marie-Louise* were repaired; a new crane was put on the dredge.

## L'ASSOMPTION.

From July 17 to November 11, 1908, dredge *No. 3*, belonging to the Dominion Dredging Company, worked here, deepening the channel and also removing a shoal at the entrance of L'Assomption river. Twenty cuts were made, 225 feet long each and 30 feet wide. Some 89,994½ cubic yards of clay, stones and sand were removed.

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## LIEVRE RIVER.

The dredging at this place was performed by the departmental dredge No. 2, and consisted in removing part of a landslide from the channel as well as deepening and widening the channel at the foot of the locks. A cut, about 500 feet long, was made with a width of 25 feet. One other cut, about 150 feet long and 25 feet wide, was made in the channel, about  $\frac{1}{4}$  of a mile below the locks. The entrance to the locks was also cleaned out. One other cut was also made for the purpose of deepening and widening the channel at the head of the locks. Some 13,177 cubic yards of clay were removed.

## LOUISEVILLE.

Dredge *Prince Guy*, belonging to W. J. Pourpore, working at this place from May 23 to July 4, 1908, making two cuts, 600 feet long by 40 feet wide, in front of the wharf. Some 23,142 cubic yards of clay were removed.

## MONTEBELLO.

Departmental dredge *Nipissing*, worked here from October 12 to 24, 1908. Three cuts were made through a sand bar alongside the wharf, 187, 236 and 247 feet long and 30 feet wide. This work is for the purpose of deepening as well as making a basin. Some 7,110 cubic yards of sand were removed.

## NICOLET.

Dredge *Ottawa*, belonging to Canada Improvement Company, worked here from June 15 to October 10, 1908, and the work consisted in cleaning out the channel alongside the breakwater for the purpose of giving a better channel to passenger boats and also barges carrying stones and wood. Two cuts, each 750 feet long, and two cuts, each 1,750 feet long, were made to a width of 30 feet. Some 44,395 cubic yards of clay and sand were removed.

## PAPINEAUVILLE.

The dredging at this place was performed by the departmental dredge *Nipissing* from September 28 to October 10. Two cuts were made, 500 feet and 533 feet long and 30 feet wide, in the channel opposite the saw-mill; 10,035 cubic yards of clay were removed.

## POINTE LÉVIS.

Departmental dredge *Challenge* worked at this place from June 11 to July 22, 1908, 6,750 cubic yards of boulders and hardpan were removed. The dredging was done in front of the pulp wood conveyer. Five cuts were made, 557, 557, 95, 100 and 180 feet long each and 26 feet wide.

## PORT ST. FRANCIS.

Canada Improvement Company's dredge *Mohawk* worked at this place from July 3 to the 30th, 1908, removing 12,098 cubic yards of sand. Two cuts, 110 and 60 feet long and 26 feet wide, were made for the purpose of cleaning in front of the wharf. Also three other cuts were made from above wharf leading out to the main channel 180 feet long each and 26 feet wide.

## QUEBEC.

Four dredges belonging to the department worked at this place, viz.:—the *Challenge* from July 23 to September 30, *International* from May 18 to November

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13 the *Ottawa* from August 10 to November 28, and *Progress* from May 5 to June 20, 1908.

Work was performed at Drolet's basin and consisted in dredging at the entrance to the shipyard. Eight cuts were made 150, 150, 50, 80, 80, 80, 50 and 50 feet long and each 22 feet wide.

Dredging also consisted in deepening the basin between the Grand Trunk Railway wharf and the shore to permit of larger vessels unloading pulpwood. The work done at Louise basin consisted in deepening between the wharf and the shore to permit barges to unload pulpwood to the elevator. Work at Quebec harbour consisted in deepening and levelling the bottom for new cribs.

Inside the Customs basin was also deepened for the purpose of accommodating deeper draught vessels. Work was also performed at Drolet's basin deepening at the entrance to the shipyard. Dredging done at breakwater pier consisted in taking out sand for backfilling in connection with the Davis contract.

The total number of cubic yards removed during the season was 163,910 cubic yards of sand, clay, boulders and gravel.

## RIGAUD.

Dredge *Little Giant*, belonging to L. Cohen & Son, worked at this place from September 25 to October 10 and from November 9 to 26, 1908. Dredging was performed in front of the wharf for the purpose of giving a better approach to vessels. One cut, 1,785 feet long was made to a width of 36 feet. Another cut was made at the entrance of the river, 1,820 feet long and 36 feet wide; 29,455 cubic yards of clay, sand and rocks were removed.

## RIMOUSKI.

Dredge *Progress*, belonging to the department, worked here from June 22 to September 26, 1908, removing 65,800 cubic yards of clay. Dredging consisted in deepening and widening the channel from the wharf to deep water.

## RIVER BATISCAN.

Dredge *Capital*, owned by Turcotte & Dufresne, worked at this place from May 27 to November 4, 1908; 108,333 cubic yards of sand were removed. The dredging consisted in making a cut at the mouth of the river from the main channel to the mill, also widening and deepening the channel above C.P.R. bridge.

## RIVER DU LOUP (EN HAUT).

From October 12 to 15, 1908, dredge *Ottawa*, W. J. Poupore Co., worked here cleaning out and deepening in front of the government wharf; 5,200 cubic yards of clay was removed.

Dredge *Prince Willie*, belonging to W. J. Poupore Co., worked at this place from July 6 to September 12, and from October 21 to November 13, 1908 removing 102,973 cubic yards of clay and sand.

Operations consisted in cleaning around government wharf and also mill wharf. One cut was made, 900 feet long and 35 feet wide, in the main channel, one half mile below the mill. Work was also done at the mouth of this river and consisted in cleaning out the channel for a distance of about one mile.

## RIVER DU LOUP (LOUISEVILLE).

Dredge *Pontiac*, belonging to W. J. Poupore & Co., worked here from June 11 to July 14, 1908, cleaning in front and around the wharf of the Tourville mills, for the purpose of giving more water for vessels loading lumber; 20,645 cubic yards of clay and sand were removed.

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## RIVER JESUS.

Dredge *Huron*, owned by the Canada Improvement Company, worked at this place from June 18 to November 14, 1908, removing 52,636 cubic yards of clay, boulders and hardpan. Operations consisted in making a channel from the wharf towards River Mascouche. Two cuts were made, 2,600 feet and 1,000 feet long each, and 25 feet wide. Four other cuts were also made 400, 400, 190 and 950 feet long, 25 feet wide in the channel in front of Lachenaie village.

From July 4 to September 5, 1908, dredge *Mohican*, owned by the Canada Improvement Company, also worked at this place, cleaning out a cut for a distance of 2,622 feet in the channel, starting above McDonald's wharf and going towards Mascouche river; 22,836 cubic yards of sand and gravel were removed.

## RIVER MASKINONGE.

Dredge *Chateauguay*, owned by L. Cohen & Son, worked here from May 28 to October 10, 1908, removing 66,945 cubic yards of clay and sand. The dredging performed consisted in deepening and widening the channel three miles below the village.

From September 7 to November 10, 1908, dredge *No. 6*, belonging to L. Cohen & Son, also worked here assisting in the above work. This dredging was for the purpose of giving a better channel for the boats carrying general traffic to and from the village. One cut was made, 8,700 feet long and 30 feet wide; 24,971 cubic yards of clay and sand were removed.

## RIVER OUELLE.

The dredge *Premier*, owned by the Canada Improvement Company, worked here from July 17 to September 12, 1908. Dredging was performed at this place to permit the ferry steamer, which effectuates a daily summer and winter service between River Ouelle, on the south shore of the St. Lawrence, and Murray Bay and other places on the north shore, to land and find shelter on either side of the wharf. Two cuts were made, about 100 feet wide and 300 feet long. Some 13,916½ cubic yards of clay and stones were removed.

## RIVER ST. FRANCIS.

From May 8 to December 5, 1908, dredge *Duke of York*, worked here, removing 202,419 cubic yards of clay, sand, gravel and boulders. The dredging done consisted in making two cuts, in front of the wharf, 2,700 feet and 4,000 feet long. Another cut was made, 6,000 feet long, in front of the proposed wharf. One cut, 310 feet long, was made in the main channel opposite Tourville mills. One more cut was also made, 700 feet long, from the proposed wharf at Abenaki Springs to the main channel. All these cuts were made to a width of 33 feet. This dredge belongs to the W. J. Poupore Company.

The dredge *Pontiac*, owned by the W. J. Poupore Company, also worked at this place from May 11 to June 11, 1908, and from November 2 to 21, 1908, removing 72,384 cubic yards of clay, sand and gravel. Two cuts were made, 250 feet long and 33 feet wide, on the west side along the bank, to deepen for a proposed wharf. Two cuts were also made near the entrance of the river, 4,772 and 5,545 feet long and 33 feet wide.

From November 20 to 21, 1908, W. J. Poupore & Company's dredge *Prince Willie* worked at this place, cleaning a cut previously made at the entrance of this river; 2,964 cubic yards of clay were removed.



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## ST. JEAN DES CHAILLONS.

From May 11 to June 9, and from October 1 to 31, 1908, departmental dredge *Challenge* worked here, making five cuts in the channel, 500, 200, 225, 468 and 100 feet long and 25 feet wide. The purpose of this work was the deepening and widening of the channel in front of the brick yards; 11,950 cubic yards of sand, clay and boulders were removed.

## ST. JOHNS.

Departmental dredge *Richolieu* worked at this place from May 21 to June 6, 1908, making five cuts, 195, 185, 180, 170 and 155 feet long by 20 and 18 feet wide, in the main channel, near Iberville wharf. One other cut was also made in channel, alongside canal bank, 540 feet long and 25 feet wide; 2,962 cubic yards of hardpan and boulders were removed. This dredge also worked here from September 28 to December 4, 1908.

## ST. MAURICE RIVER.

Dredge *St. Pierre*, belonging to Antoine St. Pierre, worked at this place from May 15 to August 31, from September 10 to September 30, from October 1 to 3 and from November 16 and 17, 1908, deepening the east channel in front of Grants mills and the west channel near Da'ton wharf. The channel was also deepened and widened near Baptist island; 170,800 cubic yards of clay, sand, gravel and boulders were removed.

## ST. PIERRE LES BECQUETS.

From August 24 to November 10, 1908, dredge *Mohawk*, belonging to the Canada Improvement Company, worked here, making a cut from main channel towards the wharf, also cleaning up a cut, which was made the previous season and had partly filled in; 39,390 cubic yards of clay, sand and boulders were removed.

## ST. PLACIDE.

Dredge *Central City*, belonging to L. Cohen & Son, worked at this place from June 1 to November 25, 1908, making several cuts around the wharf, also making a cut from the main channel to the wharf; 151,956 cubic yards of clay, sand and stones were removed.

## SAGUENAY DREDGING.

Some dredging was done during the fiscal year in Chicoutimi harbour, under contract with the General Construction Company, of Montreal.

The site for the extension of the wharf was dredged to 15 feet, and the approach to 22 feet, except close in to the wharf, where it was dredged to 15 feet only.

Some 64,615 cubic yards, consisting of clay, sand, slabs and saw-dust, were removed.

Work was started on July 18 and completed on October 26, 1908.

## SOREL.

Departmental dredge *International* worked at this place from November 16 to 21, 1908, removing 2,250 cubic yards of sand and boulders. Work consisted in dredging in the harbour opposite new wharf.

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## THREE RIVERS.

Dredge *No. 6*, Gaspard de Serre, worked at this place between July 17 and 31, making a cut above Bureau wharf in the channel for the purpose of deepening and cleaning out; 642 cubic yards of clay were removed.

Dredge *Premier*, belonging to L. Cohen & Son, also worked at this place from September 24 to November 19, 1908, removing 30,066 cubic yards of sand. A cut was started at this place, above the government wharf, opposite the old Windmill, near the shore, so as to build a coal wharf and also make a place of refuge for vessels.

## VAUDREUIL.

Dredge *Canada*, Dominion Dredging Company, worked at this place from June 20 to September 26, 1908, removing 83,308 cubic yards of clay. Four cuts were made along the front of the wharf, 175 feet long and 30 feet wide, for the purpose of giving a better approach to vessels. Also two other cuts were made, 6,000 feet long and 20 feet wide from the wharf going towards the main channel.

## VERDUN.

Dredge *St. Louis*, belonging to the department, worked at this place from June 4 to August 1, 1908, removing 3,702 cubic yards of clay and rocks. The dredging done at this place was in front of the government wharf. Three cuts were made in front and alongside to deepen and clean out an approach. These cuts were made to a length of 250 feet each and a width of 25 feet. Also two cuts of 75 feet were made in the main channel below the wharf to allow boats to turn. Two other cuts were made at the foot of Ile aux Herons, 250 feet long each and 28 feet wide, for the purpose of cleaning out the main channel.

## VILLE MARIE.

Departmental dredge *Queen* worked at this place from November 1 to 14, 1908, making two cuts, 254 feet and 118 feet long, with a width of 20 feet each. This work was done to remove material that had fallen in during the spring freshets; 2,520 cubic yards of clay were removed.

## YAMACHICHE.

Dredge *Prince Willie*, belonging to the W. J. Poupore Company, worked here from September 14 to October 20, 1908, cleaning out a cut from the main channel to the entrance of this river, a distance of about 1½ miles; 84,126 cubic yards of clay were removed.

W. J. Poupore's dredge *Prince Louis*, also worked at this place, making a cut about 5,000 feet long, 55 feet wide, to widen and deepen the channel at the entrance of this river and allow barges to enter; 119,832 cubic yards of clay were removed. This dredge worked here from May 28 to September 5.

## YAMASKA.

Dredge *Pontiac*, belonging to W. J. Poupore Company, worked at this place from July 15 to October 30, 1908, and removed 147,124 cubic yards of sand and clay. One cut, 1,700 feet long, was made in the main channel, near Ile aux Citrons, for the purpose of cleaning the channel where it had filled in. One other cut, 3,000 feet long and 33 feet wide, was also made for the same purpose.

Departmental dredge *St. Louis* also worked here from August 3 to October 3; 11,907 cubic yards of sand and clay were removed. Work consisted in cleaning a

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cut made the previous season, for a length of 2,766 feet, in Bay la Vallière, opposite Ile St. Jean. Two other cuts were also made, 150 feet long each and 25 feet wide, in the main channel at the foot of Ile St. Jean.

## PROVINCE OF ONTARIO.

## BLANCHE SHOALS.

Dredge *No. 1, T. F. Moore* worked at this place from August 25 to November 23, and dredge *No. 2, T. F. Moore*, from August 11 to November 23, 1908. The dredging performed was the continuation of the work done the previous season, being the removing of a shoal which obstructed the main channel.

## BLIND RIVER.

Dredge *Meade* worked at this place between June 8 and September 8, 1908, and consisted in the deepening and widening of the channel and approaches to the new government wharf to a depth of 15 feet, and a width of 118 to 215 feet, also deepening the turning basin at the wharf to 15 feet below low water. The turning basin is 280 feet in width. The greatest length of cut made is 2,600 feet; one cut, 25 feet wide by 800 feet long, was made from the government wharf to the White Pine Company's wharf.

## BOWMANVILLE.

Between August 17 and September 26, 1908, dredge *Dragon Rouge* worked at this place, making a cut between the piers, 1,350 feet long by 100 feet wide, also dredging in the approaches thereto from the lake; the latter is bell-mouthed, being 300 feet in width at the southerly or outer end, narrowing to 100 feet, to connect with cut between the piers, and 300 feet in length.

## BURLINGTON CHANNEL.

Dredge *Chief* worked at this place between April 30 and June 5, and also on June 9, 1908. The dredging performed was between the piers and in the approaches thereto from the lake. The cut between the piers was 80 feet in width by 1,360 feet in length, and the cut from the lake to the piers was 400 feet in length by 170 feet in width at the easterly or outer end, and narrowing to 80 feet between the piers aforesaid.

## COBOURG.

The dredging at this place was performed by dredge *Chief* between July 24 and October 15 and also between November 5 and 10, 1908, and consisted in the widening and deepening the approaches to the harbour and widening and deepening the inner basin. The width of cut made this year in approach is, at outer end, 375 feet and, at inner end, 200 feet wide by about 1,100 feet in length. The area dredged in inner harbour is triangular in shape, having a base of about 700 feet adjoining esplanade and side of 275 feet adjoining easterly pier.

## COLLINGWOOD.

The dredge *Kingsford* worked at this place between April 28 and November 7, 1908, and the dredging consisted in the deepening of the main channel, where necessary, also dredging to 12 feet between the elevator wharf and the old pier of eastern breakwater. The length of this work was 350 feet along old pier and about 650 feet

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along the eastern breakwater. The dredging at and to the Meat Company's wharf, consisted in dredging alongside the wharf a cut, 225 feet in width by 450 feet in length, and, at the end of wharf, a turning basin, 275 feet long by 175 feet wide. This work was partially completed when operations were ordered to be suspended for the season. Some 52,410 cubic yards of hardpan, sand, mud and rock were removed.

## DARK CHANNEL.

R. Weddell's dredge *Trenton* worked at this place from June 5 to November 7, 1908, and the dredging consisted in the continuation of the excavation of the channel leading from the Murray canal to Trenton harbour, a distance of some 13,200 feet with a width of 100 feet. This work is nearing completion and should be finished early next season. Some 154,945 cubic yards of clay, gravel, stones, sand, mud and rock were removed.

## GARDEN ISLAND.

Dredge *Sir Richard*, belonging to the Department of Public Works, worked at this place from November 9 to 28, 1908, making one cut, 1,000 feet long and one 200 feet long and 35 feet wide each, alongside and in front of the pier. About 7,800 cubic yards of sand and mud were removed.

## GODERICH.

Dredge *Arnoldi*, belonging to W. L. Horton, worked at Goderich between May 4 and June 6, and also from August 1 to November 28, 1908, removing 47,410 cubic yards of clay, gravel, sand and mud. Dredging consisted in the enlarging of turning basin in inner harbour, as also excavating a channel at outer entrance to harbour to the required depth.

## HAMILTON.

Two dredges, belonging to W. E. Phin, viz.: *Chief* and *Hamil*, worked at this place, dredging a cut, 50 feet wide by 800 feet long, to the easterly side of the channel dug last year, from the Hamilton Steamboat Company's wharfs, making this portion of the channel 160 feet wide, extending out to a channel dredged this year, 200 feet wide by 400 feet in length. A cut was also made alongside the Turbinia wharf, 120 feet wide, at the inner or southerly end, and 150 feet wide, at the northerly end, by 450 feet in length, also a berth adjoining the easterly side of the city wharf was excavated, 200 feet wide by 250 feet in length, and a cut in front of the revetment wall, adjoining same at westerly end, 200 feet long by 160 feet wide. A cut was made along the front of the revetment wall, 1,040 feet long by the following widths: 150 feet is 70 feet wide, 450 feet is 100 feet wide, 400 feet is 200 feet wide, and 50 feet is 150 feet wide. The material from this cut was cast over the revetment wall by the clam-shell dredge, the city authorities levelling the same in the rear thereof. The dredge *Chief* worked here from June 6 to 8, and from June 10 to July 7, and the dredge *Hamil* worked from July 28 to November 30, 1908. Some 144,467 cubic yards of sand and clay were removed.

## HAWKESBURY.

Dredge *Little Giant*, belonging to L. Cohen & Son, worked at this place from October 13 to November 5, 1908, making two cuts in the channel opposite the cement works, 280 feet and 350 feet long and 20 feet wide. About 4,130 cubic yards of clay and sand were removed.

Dredge *Oneida*, belonging to the Canada Improvement Company, also worked at this place from August 11 to October 10, 1908, cleaning the approaches to and

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around wharf. Ten cuts were made, 400 to 500 feet long each and 30 feet wide. About 31,372½ cubic yards of clay and stones were removed.

## KINCARDINE.

W. L. Horton's dredge *Arnoldi* worked at this place from June 24 to July 9, 1908. The dredging was performed to provide required depth for safe entrance to channel and to docks in inner harbour. Some 9,000 cubic yards of clay, gravel and sand were removed.

## KINGSTON.

Departmental dredge *Sir Richard* worked at this place from June 4 to August 8 and from October 19 to November 7, 1908, making one cut, 200 feet long, 25 feet wide, alongside Richardson's coal dock. Also four cuts, 300 feet each and 25 feet wide, were made in the harbour of refuge. One other cut was made, 1,000 feet and 25 feet wide in the new channel leading to the smelter. Alongside the Canadian Pacific Railway dock, four cuts were made, 200 feet long and 25 feet wide.

## LAKE NIPISSING.

Departmental dredge *Mattawa* worked at this place from June 8 to November 28, 1908. One cut was cleaned up for a distance of 750 feet in the main channel at the mouth of the Sturgeon river. Two cuts were also made in the channel at the mouth of the Little Sturgeon river, 2,000 and 400 feet long and 25 feet wide. Work was also done in the channel at the mouth of the South river. A cut, 3,083 feet long and 25 feet wide, was made. Some 65,950 cubic yards of clay and sand were removed.

## LION'S HEAD.

From August 24 to September 26, 1908, the dredge *No. 1*, belonging to the C. S. Boone Dredging & Construction Co., worked at this place, widening and deepening the harbour, by adding a cut to the southwesterly side thereof, some 540 feet in length by an average width of 200 feet. About 14-135½ cubic yards of sand, gravel and boulders were removed.

## LITTLE CURRENT.

Dredges *Meade* and *No. 14*, owned by the C. S. Boone Dredging & Construction Co., worked at this place—the *Meade* from April 22 to May 30, 1908, and the *No. 14* from April 23 to November 14, 1908. The work at this place, during 1908, consisted in a continuation of the drilling and blasting and dredging of a channel, 300 feet in width by about 1,800 feet in length, to a depth of 22 feet below low water. This channel will be completed, it is expected, early next season. An extension has been authorized by the removal of an additional segment on the northerly side, some 75 feet in width by 700 feet in length. About half this area was drilled during the fall of 1908.

The quantity of 121,845 cubic yards of rock, clay and sand was removed.

## L'ORIGINAL.

Dredge *Nipissing*, belonging to the Department of Public Works, worked at this place from October 26 to November 14, 1908, making two cuts alongside the wharf for the purpose of cleaning out and deepening to allow barges to load alongside. These cuts were 250 feet and 273 feet long and 30 feet wide. Some 6,390 cubic yards of clay and boulders were removed.

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## MEAFORD.

The dredge *Togo*, owned by R. Weddell, worked at this place from July 20 to September 5, 1908. The dredging at this port consisted in the removal of the material in front of the new revetment wall; the cut was 300 feet in length by 135 feet at the northerly end and triangular in form. This, along with deepening the westerly side of harbour, comprises the dredging done here this season. Some 23,668 cubic yards of hardpan, mud, gravel and clay were removed.

## MISSION AND KAMINISTIQUEA RIVERS.

Five dredges, belonging to the Great Lakes Dredging Co., worked at this place, viz.:—*No. 6*, from May 7 to September 5; *No. 8*, May 4 to December 1; *No. 5*, from April 23 to December 4; *No. 15*, from September 7 to December 5; and *Dominion*, from May 9 to December 5, 1908. The channel in the Grand Trunk Pacific dock to Canadian Northern dock was widened to full width of river and deepened to grade covering a length of 5,000 feet by an average width of 300 feet.

*Consolidated Elevator*.—One dredge cut was made in front of this dock extending from the west end of the old Neebing dock to the west end of Consolidated dock, being 540 feet in length by 30 feet in width.

*Elevator D*.—Shoal areas in front of this elevator were removed covering a length of 940 feet and average width of 100 feet.

*Opposite Ogilvie's Elevator*.—Shoal areas on south side of river, covering a length of 1,800 feet, with an average width of 100 feet, were removed.

*Kaministiquia River off Mouth of McKellar River*.—Three dredge cuts were made in this section removing shoal areas being in length 350 feet and an average width of 120 feet.

*McKellar River*.—Two dredge cuts were carried down this river from the Kaministiquia river, being 800 feet in length and 75 feet wide.

*Mission River*.—The Mission river was deepened and widened from its junction with the Kaministiquia river to the shore line of Thunder bay, being a length of 2 miles 600 feet and an average width of 240 feet.

*Grand Trunk Pacific Basin*.—Dredging was extensively carried on in this section. Three dredges were employed during most of the season on this area. The area excavated was 1,850 feet in length by an average width of 600 feet.

The quantity of 2,858,881 cubic yards, clay, sand, rock and boulders, was removed during the season by the above five dredges.

## NEPIGON RIVER.

Dredge *No. 9*, belonging to The Great Lakes Dredging Company, worked here from September 8 to December 5, 1908, removing 238,826 cubic yards of sand. The dredging consisted in making a channel, 1,716 feet long and 150 feet wide.

## NEWCASTLE.

The dredge *Dragon Rouge*, owned by F. Simpson, worked at this place from October 1 to November 5, 1908, dredging a cut between the piers, 500 feet of which is 60 feet wide and 550 feet is 100 feet wide; the remainder is a bell-mouthed approach to the channel, having a width at outer end of 235 feet and a length of 100 feet. Some 19,298½ cubic yards of clay, sand and mud were removed.

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## NEW LISKEARD.

Departmental dredge *Queen* worked at this place from June 19 to October 31, 1908, removing 29,682 cubic yards of clay. The work performed in this locality consisted in the dredging of a basin, 65 feet in width and 300 feet long, in front of the wharf. One cut, 900 feet long and 20 feet wide and one 314 feet long and 20 feet wide, was made in the channel at the elbow. These two cuts were made to a depth of 8 feet at low water. This latter work was done to remove silt that washed in from the Wabi river since dredging was done in 1907.

## OWEN SOUND.

From June 2 to August 8, 1908, the dredge *Frank*, belonging to A. F. Bowman, worked in this port, dredging a cut 2,200 feet long, with an average width of 100 feet, along the easterly side of channel to harbour, and a cut, 1,800 feet long by 50 feet wide, along the westerly side of said channel, making the approach to the piers 375 feet wide, also one cut was made in front of the new revetment wall, about 450 feet long. Some 96,600 cubic yards of clay and sand were removed.

## PELEE ISLAND.

From August 24 to November 21, 1908, dredge *Ontario*, belonging to the Department of Public Works, worked at this place making one cut, 275 feet long and 25 feet wide on south side of McCormick's stone quarry dock. Dredging was also done at the lighthouse marsh, making a cut from 8 feet of water at 360 feet from the beach, then, through to the line of embankment, throwing material to one side raising a bank 6 feet above water; 23,980 cubic yards of sand, clay and boulders were removed.

## PENETANGUISHENE.

The dredge *Frank*, owned by A. F. Bowman, worked here from August 11 to October 20, 1908, and the dredge *Hackett*, owned by The Penetanguishene Dredging Company, from November 26 to December 1, 1908. The dredging performed at this place consisted in making a cut in the channel approaching the town wharf, some 800 feet in length by 150 feet in width, and in front of the town wharf a cut was made, some 300 feet wide and 880 feet long, also a cut was dredged at the foot of Queen street to location of proposed town wharf, 700 feet long by 75 feet wide. Some 140,713 cubic yards of clay were removed.

## PICKTON.

Dredge *King Edward*, belonging to the Windsor Dredging Company, worked at this place from July 14 to November 28, 1908, removing 218,000 cubic yards of mud and clay. The work at this place consisted in dredging in the approaches and in the harbour proper. A cut, 2,250 feet long with an average width of 125 feet, was dredged along the easterly side of the harbour. The southerly end of harbour was dredged the entire width and for a length of 750 feet; this area varied in width from 145 feet to 340 feet. A cut was also made on the westerly side of harbour, some 1,175 feet in length with an average width of 75 feet. Some dredging was done at the R. & O. wharf, at northerly end of harbour. The entrance to the harbour was widened and deepened.

## POINT EDWARD.

The dredge *St. Lawrence*, belonging to Manley Company, worked at this place from May 9 to July 22, from August 1 to September 4 and from November 18 to 21, 1908. The dredging performed consisted in the partial removing of a middle ground

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and providing safe depth of water along front of docks for deep draught vessels. Some 150,794 cubic yards of sand and gravel were removed.

## PORT ARTHUR.

From May 9 to July 14, 1908, dredge *I.X.L.*, owned by R. Weddell, worked here completing the dredging required in Port Arthur harbour and removing 38,186 cubic yards of clay, sand and stone.

## PORT BRUCE.

The dredge *E. Hall No. 1* worked at this place from September 18 to October 17, 1908, 12,835 cubic yards of clay, sand and gravel were removed. The dredging performed consisted in the removal of a sand bar which had formed between the piers, and which prevented safe ingress and egress from the harbour. Twenty-two oak piles, which had formed an obstruction on line of channel, were also removed. Work has proved very beneficial.

## PORT BURWELL.

From May 13 to September 12, 1908, the dredge *E. Hall No. 1*, owned by the Canadian Construction and Dredging Co., worked at this place, making five cuts, 400 feet long, two cuts 1,000 feet long and one cut 700 feet long and 25 feet wide each, at the entrance to the piers. Work was also performed in the inner harbour, two cuts, 500 feet long, three cuts, 150 feet long, two cuts, 300 feet long and three cuts, 75 feet long were made to a width of 25 feet. All this dredging was done wherever less than 17 to 18 feet of water was found. Some 43,886 cubic yards of clay, sand and quicksand were removed.

## PORT ELGIN.

From July 14 to July 31, 1908, the dredge *Arnoldi* worked at this place, dredging opposite landing dock to provide turning basin and also in channel leading to dock. Some 9,500 cubic yards of clay and sand were removed.

## PORT HOPE.

The dredge *Chief*, owned by W. E. Phin, worked at this place, deepening and widening the approaches to and the space between the outer piers. The length of the area dredged is 1,063 feet, with a minimum width of 125 feet and a maximum width of 315 feet. The dredge worked here from October 15 to November 4, and from November 10 to 28, 1908, removing 52,274 cubic yards of sand, mud and clay.

## PORT STANLEY.

Departmental dredge *Ontario* worked at this place from April 20 to August 22, 1908, removing 40,365 cubic yards of sand, gravel and clay. The work at this place was dredging of crib seats for new breakwater. Two and a half cuts were made, 600 feet long each to a total width of 50 feet. Three cuts were also made at north end of breakwater, 250, 225 and 180 feet long each. On each side of entrance to harbour, four cuts were made 760, 660, 575 and 450 feet long to a total width of 100 feet. Inside of harbour, on each side of west pier, two cuts were made through shoal spot, each 350 feet long and 50 feet wide. On each side of harbour to entrance of turning basin, five cuts were made, 340, 300, 300, 300 and 250 feet long and 125 feet total width. A shoal was removed on same side further north in front of the proposed dock. Three cuts were made, 200, 340 and 340 feet long, with a total width of 75 feet.



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## ROCKLAND.

Departmental dredge *Nipissing* worked here from August 17 to 29, 1908, removing 6,030 cubic yards of clay. The dredging consisted in deepening the channel in front of Edward's sawmill. Three cuts were made, 304, 230 and 108 feet long and 30 feet wide.

## RONDEAU.

From October 30 to September 5, 1908, the dredge *Hall No. 1* owned by the Canadian Construction and Dredging Co., worked at this place removing 19,315 cubic yards of clay and sand. The dredging performed consisted in the widening of basin in inner harbour, as also dredging of small portion of channel at outer entrance to harbour. Improving of this outer channel will require urgent attention as soon as spring opens up in order to allow safe entrance for the coal boat which plies in and out of this port.

## RUSCOMBE RIVER.

The dredge *Pelée*, owned by the Chatham Dredging and General Construction Company, worked here from September 3 to September 30, 1908, removing 10,403 cubic yards of clay and sand. The dredging consisted of the opening up of a channel at entrance to river, and also providing channel of sufficient depth to render this river navigable as far as St. Joachim.

The dredge *Wilcox*, also owned by the Chatham Dredging and General Construction Company, worked here assisting in the above work from September 28 to December 11, 1908, removing 38,305 cubic yards of clay.

## SARNIA.

From July 13 to 15, and from July 23 to 31, 1908, dredge *St. Lawrence*, owned by the Manley Company, worked at this place, removing two shoals which formed serious obstruction in St. Clair river, opposite Sarnia; 20,768 cubic yards of clay and gravel were removed.

## SAULT STE. MARIE.

Dredge *No. 1, A. F. Bowman*, worked at this place from May 20 to November 14, 1908, deepening and widening the approaches to the government wharf by the removal of shoal patches and large boulders which are scattered over the bottom of the river in said approaches; 34,334 cubic yards of boulders, sand and rock were removed.

## SPANISH RIVER.

Dredge *Meade*, C. S. Boone Dredging and Construction Company, worked here from September 21 to November 14, 1908, dredging a portion of the channel, which when completed will be 6,750 feet in length by 80 feet wide at the bottom, having side slopes of 1 vertical on 3 horizontal to a depth of 12 feet below low water. This channel extends from the mouth of the river up stream through two large sand bars; 66,738 cubic yards of clay, sand and quicksand were removed.

## SUMMERSTOWN.

Dredge *No. 5, R. McDonald*, worked at this place from June 4 to September 26, and from October 2 to October 14, 1908, deepening alongside the wharf, also making three cuts from the wharf to the main channel, each 900 feet long and 25 feet wide. One cut was already made in the main channel, 500 feet long and 30 feet wide; 135,300 cubic yards of hardpan, gravel and clay were removed.

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## THAMES RIVER.

Dredge *St. Lawrence*, belonging to Manley Company, worked here from September 7 to November 14, 1908, removing 61,094 cubic yards of clay and sand. The dredging performed consisted in improving the channel at entrance to the river in order to provide safe entrance.

## THORNBURY.

From May 27 to July 18, and from September 12 to November 10, 1908, dredge *Togo*, belonging to R. Weddell, worked at this place, removing 64,297 cubic yards of clay, sand and gravel. The dredging consisted in the construction of a well sheltered basin as an extension of the harbour, which is now 600 feet long with a minimum width of 200 feet and a maximum width of 400 feet. Two cuts were made in the approaches to the harbour.

## TIFFIN.

Dredge *Excelsior*, belonging to the Canadian Dredging and Construction Company, and Owen Sound Dredging and Construction Company, worked here from May 4 to June 27, and from September 9 to December 8, 1908, removing 97,623 cubic yards of clay, sand and rock.

From May 4 to May 30 and from July 14 to September 3, and from October 15 to 17, 1908, the dredge *Monarch*, belonging to the Canadian Dredge and Construction Company, and the Owen Sound Dredging and Construction Company, worked here, removing 81,540 cubic yards of clay, sand, gravel, boulders and rock.

This work consisted in dredging a cut 1,521.4 feet long by 240 feet in width, as a channel to the slip in front of the new Grand Trunk Pacific elevator and wharfs. The portion of the slip dredged this year consists of one cut alongside the wharf, 650 feet long by 70 feet wide, and a cut on the opposite side of the slip, at outer end, 200 feet long by 36 feet wide. The work done here this season enabled the largest grain boats in the Canadian trade to discharge their cargoes at the new elevator.

## TORONTO.

Dredge *King Edward*, owned by the Windsor Dredging Company, worked at this place from May 26 to July 7, 1908, removing 43,400 cubic yards of sand. The dredging done consisted in the cleaning up and completion of the bell-mouth entrance to the Eastern channel of the harbour, making it 1,000 feet wide at outer end and narrowing to 400 feet, being the width between the piers.

## VICTORIA HARBOUR.

Two dredges belonging to the Canadian Dredging and Construction Company worked at this place, the *Excelsior* from June 29 to September 1, and the *Maine* from July 28 to October 31. Two dredges, belonging to the Owen Sound Dredging and Construction Company, also worked at this place, *Monarch* from June 2 to July 11, September 4 to October 14, and from October 26 to December 8, and the *No. 9* from May 11 to December 5, 1908. Dredge *Sydenham*, belonging to the Canadian Construction Company, worked here from November 2 to December 8, 1908.

The work during 1908, at this place consisted in dredging in the channel to and the slip in front of the proposed site of the new Canadian Pacific Railway grain elevator and wharfs. The cut in the channel is 1,820 feet long by 200 feet wide. The cut in front of the wharfs and elevator site is about 300 feet wide, and 2,300 feet long, with the exception of one cut unfinished. There are two cuts 1,000 feet long by about 100 feet wide; 503,459 cubic yards of mud, clay, sand, gravel, boulders and rock were removed.

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## WAUBAUSHENE.

Dredge *Hackett*, belonging to the Penetanguishene Dredging Company, worked at this place from June 6 to November 24, and removed 119,625 cubic yards of clay, sand, mud and rock. The work at this place consisted in the dredging of a channel from the turning basin at Fesserton to the mouth of Coldwater river, a distance of some 7,200 feet. During the past season, a cut has been excavated the entire distance, less 600 feet at the river; 1,000 feet of the cut, beginning at the Fesserton turning basin, is 50 feet in width and the remainder is 25 feet in width. The depth is 10 feet and the object is to permit small tugs, &c., to reach Coldwater from Georgian bay ports. The turning basin at Fesserton was completed and is 300 feet long by 300 feet wide.

## WILARTON.

Dredge *Frank*, belonging to A. F. Bowman, worked at this place from October 26 to December 5, 1908; 63,600 cubic yards of clay were removed. The work performed during 1908 at this place consisted in dredging a channel, 20 feet in depth by 1,150 feet in length and 150 feet in width, from the deep water in the bay to the government breakwater and town wharf, also the removal of a shoal patch, 400 feet by 75 feet between the said breakwater and the town wharf.

## WINGFIELD BASIN.

C. S. Boone Dredging and Construction Company's dredge *No. 1*, worked at this place from June 3 to August 21, September 28 to 30 and from October 5 to November 7, 1908, removing 24,935½ cubic yards of hardpan, boulders, clay and rock. The work performed consisted in the dredging of a channel, 18 feet deep from the lake into the basin. It is to be, when completed, 100 feet wide by about 650 feet in length. The drilling is said to be finished and the dredging remaining unfinished can be done early next season.

## WOLFE ISLAND.

Departmental dredge *Sir Richard* worked at this place from August 10 to October 17, 1908, 27,200 cubic yards of clay and mud were removed. Five cuts were made, 1,500 feet long each and 25 feet wide, in the main channel between the light-house and the gas buoys.



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ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'CHIEF' OWNER W. F. PHIN.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Burlington Channel, Halton Co.	April 30.	June 5, 9.	15 feet.	48,472	\$ cts.	Cts.
Hamilton, Wentworth Co.	June 6.	" 8.		2,620		21½
"	" 10.	July 7.		42,718	7,994 36	15½
Cobourg, Northumberland Co.	July 24.	Oct. 15.	16 23 "	128,371		
"	Oct. 15.	Nov. 10.	21 22 "	5,865	24,675 92	18½
Port Hope, Durham Co.	Nov. 5.	" 4.		27,650		
"	Nov. 10.	" 28.	14 16 "	24,624	11,630 73	22½

Total expenditure, \$53,280.31. Total cubic yards removed, 280,310.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	27 00	58 25	129 65	311 76	160 34	158 30	143 45	108 50			1,067 25
Contingencies.....	332 00	7,709 60	7,131 10	3,536 76	8,433 00	8,135 61	9,455 66	7,449 30			52,183 06
Totals.....	359 00	7,767 85	7,260 75	3,848 52	8,593 34	8,293 91	9,599 11	7,557 80			53,280 31

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay.....	1,660	38,548	44,786	21,068	46,850	45,198	47,275	34,925				280,310

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

BERLINGTON CHANNEL.—Dredging was between the piers and in the approaches thereto from the lake.

HAMILTON.—Dredging four cuts and a turning basin.

COBOURG.—Widening and deepening the approaches to harbour, and widening and deepening the inner basin.

PORT HOPE.—Deepening and widening the approaches to and the space between the outer piers.

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ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'DRAGON ROUGE,' OWNER, F. SIMPSON.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Bowmanville, Durham Co.	Aug. 17	Sept. 26	16 feet.	22,251	\$ cts. 2,758 77	Cts. 12½
Newcastle	Oct. 1	Nov. 5	12 "	19,298½	2,399 54	12½

Total expenditure, \$5,158.31. Total cubic yards removed, 41,549½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....					39 00	71 90	103 00				213 90
					1,081 11	1,566 76	2,106 02				4,944 41
Totals.....					1,120 11	1,638 66	2,209 02	190 52			5,158 31

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
					9,085	13,166	17,677½	1,601					41,549½

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

BOWMANVILLE.—Making a cut between the piers and dredging in the approaches from the lake.  
NEWCASTLE.—Dredging a cut between the piers.

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## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

## DREDGE 'EXCELSIOR.' OWNER, OWEN SOUND DREDGING AND CONSTRUCTION CO.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Tiffin, Simcoe Co. ....	May 4	May 22	17-25 feet.	18,298	\$ cts. 5,357 42	Cts. 29 1/2
Total expenditure, \$5,357.42.	Total cubic yards removed, 18,298.		Cost per cubic yard, 29 1/2 cts.			

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages. ....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies. ....	51 00	51 00	51 00	51 00	51 00	51 00	51 00	51 00	51 00	51 00	51 00
Totals . . . . .	5,357 42	5,357 42	5,357 42	5,357 42	5,357 42	5,357 42	5,357 42	5,357 42	5,357 42	5,357 42	5,357 42

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay . . . . .	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	18,298	18,298	18,298	18,298	18,298	18,298	18,298	18,298	18,298	18,298	18,298	18,298	18,298

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

Tiffin. — Dredging a channel to the slip in front of the new Grand Trunk Pacific elevator and wharfs.

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## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

## DREDGE "EXCELSIOR." OWNER, CANADIAN DREDGING &amp; CONSTRUCTION CO.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Tiffin, Simcoe Co. ....	(May 28.....	June 27.....)	17-25 feet.	79,325	\$ cts. 70,694.78	1 14
Victoria Harbour, Simcoe Co. ....	(Sept. 9.....	Dec. 8.....)	23 "	47,970	35,737.81	0 74½

Total expenditure, \$106,432.59. Total cubic yards removed, 127,295.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts. 23 70	\$ cts. 83 94	\$ cts. 87 56	\$ cts. 83 76	\$ cts. 81 60	\$ cts. 84 07	\$ cts. 77 30	\$ cts. 25 20	\$ cts. 25 20	\$ cts. 546 53	\$ cts. 546 53
Contingencies.....	1,698 45	9,741 88	12,651 25	22,235 37	11,297 36	19,312 86	25,406 29	3,542 40	105,886 06	105,886 06	105,886 06
Totals.....	1,722 15	9,825 82	12,738 81	22,319 13	11,378 36	19,396 93	25,483 59	3,567 80	106,432 59	106,432 59	106,432 59

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay.....	Cub. yds. 4,305	Cub. yds. 29	Cub. yds. 24,620	Cub. yds. 9,151	Cub. yds. 11,366	Cub. yds. 7,400	Cub. yds. 10,803	Cub. yds. 3,325	Cub. yds. 640	Cub. yds. 1,492	Cub. yds. 1,492	Cub. yds. 1,492	Cub. yds. 93,782
Rock.....	260	805	4,255	9,374	3,577	8,484	15,974	14,189	2,132	2,132	2,132	2,132	31,513
Totals.....	4,565	4,565	28,875	18,525	14,943	15,974	14,189	14,189	2,132	2,132	2,132	2,132	127,295

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

MIDLAND (Tiffin).—Dredging a channel to the ship in front of the new Grand Trunk Pacific elevator and wharfs.

VICTORIA HARBOUR.—Dredging in the channel to and the slip in front of the proposed site of the new C.P.R. grain elevator and wharfs.



## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909.—*Continued.*  
DREDGE "E. HALL, No. 1." OWNER, CANADIAN CONSTRUCTION & DREDGING CO.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Port Burwell, Elgin Co.	May 13	Sept. 12	19 23 fath.	43,886	\$ cts. 16,646 94	Cts. 37 1/2
Port Bruce, Elgin Co.	Sept. 18	Oct. 17	10 11 "	12,835	5,846 25	45 1/2
Rondeau, Kent Co.	Oct. 30	Dec. 5	20 "	19,315	6,529 43	33 1/2

Total expenditure, \$29,013.62. Total cubic yards removed, 76,036.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.	54 00	54 00	78 00	81 00	78 00	83 50	90 98	83 75	23 00	572 23	572 23
Contingencies.	2,953 08	2,953 08	4,920 88	4,938 18	2,877 03	2,978 27	4,491 65	5,091 90	587 40	28,441 39	28,441 39
Totals.	3,007 08	3,007 08	4,998 88	5,019 18	2,955 03	3,061 77	4,585 63	5,175 65	610 40	29,013 62	29,013 62

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel.	7,572	12,662	11,592	9,918	7,777	9,795	15,430	1,780					76,036

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT BURWELL.—At the entrances to the piers. Work was also performed in the inner harbour.  
PORT BRUCE.—Removal of a sand bar which had formed between the piers.  
RONDEAU.—Widening of basin in inner harbour, and dredging of small portion of channel at outer entrance to harbour.

9-10 EDWARD VII., A. 1910

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'FRANK' OWNER, A. F. BOWMAN.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Owen Sound, Grey Co. ....	June 2, .....	Aug. 8, .....	20 feet—23 feet.	146,000	\$ cts.	Cts.
Penetanguishene, Simcoe Co. ....	Aug. 11, .....	Oct. 20, .....	17 feet—20 feet.	135,000	24,338 50	22 ½
Warton, Bruce Co. ....	Oct. 20, .....	Dec. 5, .....	" "	63,600	25,850 60	19 ¾
					15,372 52	24 ½
Total expenditure, \$65,561.62. Total cubic yards removed, 295,200.						

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....			79 00	81 00	87 10	79 50	77 50	75 40	18 12		497 62
Contingencies.....			10,000 00	11,400 00	10,350 00	10,944 00	9,256 00	10,704 00	2,400 00		65,064 00
Totals.....			10,079 00	11,481 00	10,437 10	11,023 50	9,343 50	10,779 40	2,418 12		65,561 62

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand.....			40,000	45,000	51,000	57,600	46,400	44,600	10,000				295,200

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

OWEN SOUND—Dredging a cut along the easterly side of channel to harbour, and a cut along the westerly side of said channel.  
 PENETANGUSHENE—Making a cut in the channel approaching town wharf, and in front of town wharf a cut was made; also a cut was dredged at foot of Queen Street.  
 WARTON—Dredging a channel from deep water in the Bay to the Government breakwater and town wharf; also the removal of a shoal.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'HACKETT' OWNER, PENETANGUISHENE DREDGING CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditures.	Cost per Cubic Yard.
	From	To				
Waubesaheene, Simcoe Co.	June 6.	Nov. 24.	10 feet—14 feet.	119,625	\$ cts.	Cts.
Penetanguishene, Simcoe Co.	Nov. 26.	Dec. 1.	12 feet.	5,713	21,961 51 1,085 47	18 ½ 19

Total expenditure, \$22,996.98. Total cubic yards removed, 125,338.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.			80 90	81 00	82 50	78 00	36 62	51 79			410 81
Contingen. acc.			2,884 50	2,711 25	4,464 00	3,465 00	2,445 95	6,379 75	225 72		22,576 17
Totals.			2,965 40	2,792 25	4,546 50	3,543 00	2,482 57	6,431 54	225 72		22,996 98

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, sand and mud			19,290	18,075	29,760	23,100	16,110	16,825					124,288
Rock.							1,050	1,050					1,050
Totals.			19,290	18,075	29,760	23,100	16,110	17,875					125,338

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

WAUBESAHEENE—Dredging of a channel from the turning basin at Fesserton to the mouth of the Coldwater River. The turning basin at Fesserton was completed.  
PENETANGUISHENE—Dredging at proposed town wharf.

9-10 EDWARD VII., A. 1910

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE "HAMIL" OWNER, W. E. PHIN.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Hamilton.....	July 28.....	Nov. 30.....	16 feet.....	99,129	\$ cts. 15,515 96	cts. 15½

Total expenditure, \$15,515.96. Total cubic yards removed, 99,129. Cost per cubic yard, 15½ cents.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....				\$ cts. 9 00	\$ cts. 150 26	\$ cts. 169 65	\$ cts. 164 00	\$ cts. 153 60			\$ cts. 646 61
Contingencies.....				608 40	4,063 95	3,416 40	3,915 60	2,925 00			14,869 35
Totals.....				617 40	4,163 31	3,577 05	4,079 60	3,078 60			15,515 96

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay and sand.....					Cub. yds. 26,693	Cub. yds. 22,775	Cub. yds. 26,104	Cub. yds. 19,500					Cub. yds. 99,129

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

HAMILTON—Dredging a cut to the easterly side of channel. A cut was also made alongside the Turbina wharf; also a berth adjoining the easterly side of the city wharf, and two cuts in front of the revetment wall.

## SESSIONAL PAPER No. 19

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'I. N. L.' OWNER, R. WEDDELL.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.					
	From	To									
Port Arthur Harbour, Thunder Bay Co. ....	May 9 ..	..... July 4 .....	22 feet .....	38,186	\$ cts. 3,829 67	cts. 10					
Total expenditure, \$3,829.67.    Total cubic yards removed, 38,186.    Cost per cubic yard, 10 cents.											
DETAILS OF EXPENDITURE.											
—	April.	May.	June.	July.	August.	September	October.	November	December.	January, February and March.	Totals.
Wages .....		\$ cts. 84 00	\$ cts. 104 00	\$ cts. 24 00							\$ cts. 212 00
Contingencies .....		1,483 71	1,829 89	314 07							3,627 67
Totals .....		1,567 71	1,933 89	338 07							3,829 67
QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.											
—	April.	May.	June.	July.	August.	September	October.	November	December	January.	Totals.
Clay and sand. ....		Cub. yds. 15,618	Cub. yds. 19,262	Cub. yds. 3,306							Cub. yds. 38,186

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT ARTHUR.—The work consisted in the completion of the dredging required in Port Arthur harbour.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'KINGSFORD,' OWNER, C. S. BOONE DREDGING AND CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Collingwood, Simcoe Co. ....	April 28 .....	November 7. ....	12-22 feet.	52,410	\$ 50,694 72	Cts. 96½

Total expenditure, \$50,694.72. Total cubic yards removed, 52,410.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	24 00	98 15	91 00	97 15	95 55	93 26	96 89	60 12	656 12	656 12	656 12
Contingencies .....	781 80	7,663 75	9,588 40	6,439 05	6,669 30	10,928 30	5,928 50	2,086 50	.....	.....	50,038 60
Totals .....	806 80	7,761 90	9,629 40	6,536 20	6,764 85	11,021 56	6,025 39	2,146 62	.....	.....	50,694 72

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Hard pan. ....	9,647	9,647	5,790	7,975	8,718	2,770	5,220	3,120	.....	.....	.....	.....	43,240
Sand, mud and rock.	360	199	2,350	210	60	4,060	1,575	325	.....	.....	.....	.....	9,170
Totals.....	360	9,837	8,180	8,185	8,778	6,830	6,795	3,445	.....	.....	.....	.....	52,410

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

Collingwood—Deepening of the main channel, where necessary, also dredging to 12 feet between the elevator wharf and the old pier of eastern breakwater.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE "KING EDWARD," OWNER, WINDSOR DREDGING CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Toronto, York Co. ....	May 26 .....	July 7 .....	25 feet.	43,400	\$ 8,581 00	Cts. 19½
Pictou, Prince Edward Co. ....	July 14 .....	November 28 .....	13 feet.	218,000	26,528 63	12½
Total expenditure, \$35,109.63.	Total cubic yards removed, 261,400.					

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages ...	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies .....	18 00	78 00	72 67	80 24	80 24	80 24	83 24	74 25	.....	.....	466 63
	1,248 00	5,604 00	4,809 00	6,240 00	6,240 00	5,424 00	5,472 00	5,736 00	.....	.....	34,623 00
Totals.....	1,266 00	5,772 00	4,881 67	6,320 24	6,320 24	5,504 24	5,555 24	5,810 24	.....	.....	35,109 63

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand and mud.....	6,400	29,200	35,200	52,000	45,600	47,800	.....	.....	.....	.....	.....	.....	261,400

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

TORONTO—Dredging done, cleaning up and completion of the bell mouth entrance to the eastern channel of the harbour.  
PICTOU—Dredging in the approaches and in the harbour proper.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'MEADE' OWNER, C. S. MOONE DREDGING AND CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Little Current, Algoma Co.	April 22	May 30	22 feet.	14,991	\$ 13,510 72	Cts. 90 <sup>1</sup> / <sub>2</sub>
Blind River, " "	June 8	Sept. 8	15 "	81,171 <sup>1</sup> / <sub>2</sub>	18,536 39	23 <sup>1</sup> / <sub>2</sub>
Spanish River, " "	Sept. 21	Nov. 14	12 "	66,738	16,909 25	25 <sup>1</sup> / <sub>2</sub>

Total expenditure, \$49,356.36. Total cubic yards removed, 162,900.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	10 00	39 00	47 05	100 90	91 00	169 00	80 75	43 00	529 70	529 70	529 70
Contingencies	4,385 92	9,075 80	4,546 54	6,583 63	5,667 89	5,229 03	9,501 75	3,845 00	48,835 66	48,835 66	48,835 66
Totals	4,395 92	9,114 80	4,593 59	6,684 53	5,758 89	5,398 03	9,582 50	3,888 00	49,356 36	49,356 36	49,356 36

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, quicksand and mud	1,584	7,058	19,768	28,624 <sup>1</sup> / <sub>2</sub>	21,643	21,567	28,067	15,300	15,300	15,300	15,300	15,300	156,551 <sup>1</sup> / <sub>2</sub>
Rock	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349
Totals	1,584	13,407	19,768	28,624 <sup>1</sup> / <sub>2</sub>	24,643	21,567	38,067	15,300	15,300	15,300	15,300	15,300	162,900 <sup>1</sup> / <sub>2</sub>

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LITTLE CURRENT—Continuation of the drilling and blasting and dredging of a channel 360 ft. in width by about 1,800 ft. in length to a depth of 22 ft. below low water.  
 BLIND RIVER—Deepening and widening of the channel and approaches to the new Government wharf and deepening the turning basin at the wharf.  
 SPANISH RIVER—Dredging of a portion of the channel.



## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'MONARCH,' OWNER, OWEN SOUND DREDGING AND CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Tiffin, Sincere Co .....	May 4 .....	May 23 .....	23-25 feet.	34,200	\$ cts. 9,748 29	Cts. 28½

Total expenditure, \$9,748.29. Total cubic yards removed, 34,200.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....	56 49	56 49	.....	.....	.....	.....	.....	.....	.....	.....	56 49
	9,691 80	9,691 80	.....	.....	.....	.....	.....	.....	.....	.....	9,691 80
Totals.....	.....	9,748 29	.....	.....	.....	.....	.....	.....	.....	.....	9,748 29

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	Totals.
—	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, sand, gravel and boulders.....	34,200	34,200	.....	.....	.....	.....	.....	.....	.....	.....	.....	34,200

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

TIFFIN—(See Dredge 'Monarch' Canadian Construction and Dredging Co.)

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE, 'MONARCH,' OWNER, CANADIAN DREDGE & CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Tiffin, Simcoe Co.....	May 25.....	May 30.....	14-25 feet.	47,340	\$ cts.	\$ cts.
	July 14.....	Sept. 3.....				
	Oct. 15.....	Oct. 17.....				
	June 2.....	July 11.....				
Victoria Harbour, Simcoe Co.....	Sept. 4.....	Oct. 14.....	18-23 feet.	145,500	\$ cts.	\$ cts.
	Oct. 26.....	Dec. 8.....				

Total expenditure, \$105,304.40. Total cubic yards removed, 192,840.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	18 00	82 68	83 83	80 84	81 40	83 84	77 84	22 16	22 16	.....	530 59
Contingencies.....	1,550 52	10,542 50	16,021 50	22,247 12	12,548 75	15,057 17	21,908 75	4,897 50	4,897 50	.....	104,773 81
Totals.....	1,568 52	10,625 18	16,105 33	22,327 96	12,630 15	15,141 01	21,986 59	4,919 66	.....	.....	105,304 40

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Rounders and sand.....	4,008	61,300	13,930	8,645	16,090	300	.....	.....	.....	.....	.....	.....	137,761
Rock.....	72	1,280	4,790	6,115	8,810	2,160	.....	.....	.....	.....	.....	.....	35,079
Totals.....	4,080	62,580	18,660	14,760	25,500	2,400	.....	.....	.....	.....	.....	.....	192,840

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES

TIPPIN—Dredging a channel to the slip in front of the new Grand Trunk Pacific elevator and wharfs.  
VICTORIA HARBOUR—Dredging in the channel to and the slip in front of the proposed site of the new C. P. R. grain elevator and wharfs.

## SESSIONAL PAPER No. 19

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

## DREDGE, "MAINE," OWNER, CANADIAN DREDGE &amp; CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Victoria Harbour, Sincere Co.	July 28	Oct. 31	22 feet.	120,366	\$ cts. 28,074 16	\$ cts. 0 21½

Total expenditure, \$28,074.16. Total cubic yards removed, 120,366. Cost per cubic yard, .21½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....				12 00	46 27	41 43	84 81				184 54
				486 00	5,933 25	12,534 75	6,935 62				25,889 62
Totals.....				498 00	5,979 52	12,576 18	7,020 46				26,074 16

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Gravel, clay, sand and boulders.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Rock.....				3,888	47,466	15,714	48,195						115,263
						4,698	465						5,163
Totals.....				3,888	47,466	20,412	48,660						120,366

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VICTORIA HARBOUR—Dredging in the channel to and the slip in front of the proposed site of the new C. P. R. grain elevator and wharfs.

9-10 EDWARD VII., A. 1910

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE, 'No. 1' OWNER, A. F. BOWMAN.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Sault Ste. Marie, Algoma Co. . . . .	May 20 . . . . .	Nov. 14 . . . . .	21 feet.	34,334	\$ 84,399 15	\$ 2 45½

Total expenditure, \$84,399.15. Total cubic yards removed, 34,334. Cost per cubic yard, \$2.45½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages . . . . .		..	81 34	80 80	80 32	80 89	83 92	48 12	..	..	453 38
Contingencies . . . . .		..	10,086 54	12,633 75	15,835 29	13,973 73	18,583 93	12,832 53	..	..	83,949 77
Totals . . . . .		..	10,167 88	12,714 64	15,915 61	14,054 62	18,667 75	12,878 65	..	..	84,399 15

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Ballast . . . . .	542	548	548	416	..	229	114	221	..	..	..	..	2,061
Sand . . . . .	1,975	2,062	2,062	1,595	950	759	534	274	..	..	..	..	8,149
Rock . . . . .	111	..	2,568	3,524	4,091	4,194	5,717	3,919	..	..	..	..	24,124
Totals . . . . .	..	2,628	5,178	5,535	5,041	5,173	6,365	4,414	..	..	..	..	34,334

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

SAULT STE. MARIE.—The dredging, deepening and widening the approaches to the Government wharf.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE, 'No. 9.' OWNER, CANADIAN DREDGE & CONSTRUCTION CO.

Localities where dredging was Performed	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.  \$ cts.	Cost per Cubic Yard.
	From	To				
Victoria Harbour, Simcoe Co. ....	May 23 .....	December 5 ....	22 feet.	116,100	\$ 14,975 99	Cts. 123½

Total expenditure, \$14,975.99. Total cubic yards removed, 116,100. Cost per cubic yard, .123½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages .....	29 99	82 86	71 67	46 27	41 44	74 34	53 24	93 68	23 68	463 49	
Contingencies .....	575 00	1,562 50	2,775 00	2,450 00	2,612 50	2,512 50	1,775 00	250 00	250 00	14,512 50	
Totals .....	604 99	1,645 36	2,846 67	2,496 27	2,653 94	2,586 84	1,868 24	273 68		14,975 99	

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
—	12,500	4,600	12,500	22,200	19,600	20,100	20,100	14,200	2,000				116,100
Boulders, clay, sand and mud .....													

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VICTORIA HARBOUR—Dredging in the channel to and the slip in front of the proposed site of the new C. P. R. grain elevator and wharfs.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
 DREDGE 'No. 9,' OWNER, OWEN SOUND DREDGING & CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To				
Victoria Harbour, Sincore Co. ....	May 11 .....	May 22 .....	22 feet.	6,050	\$ cts. 789 25	Cts. 13

Total expenditure, \$789.25. Total cubic yards removed, 6,050. Cost per cubic yard, 13.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages .....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies .....	33 00	756 25	.....	.....	.....	.....	.....	.....	.....	.....	83 00
Totals .....	.....	789 25	.....	.....	.....	.....	.....	.....	.....	.....	789 25

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay and mud .....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	.....	6,050	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,050

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VICTORIA HARBOUR.—See Dredge 'No. 9' Canadian Construction & Dredging Co.

## SESSIONAL PAPER No. 19

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'No. 5,' OWNER, R. McDONALD.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To				
Summerstown, Glangarry Co .....	(June 4..... October 2.....)	September 26..... October 14.....	8-14 feet.	116,100 19,200 }	\$ cts. 31,352 70	Cts. .25 $\frac{1}{2}$

Total expenditure, \$31,352. 70. Total cubic yards removed, 135,300. Cost per cubic yard, 23 $\frac{1}{2}$ ¢.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	.....	.....	57 50	.....	57 00	69 00	36 30	.....	.....	.....	219 70
Contingencies .....	.....	.....	8,349 00	2,898 00	6,940 50	8,229 50	4,416 00	.....	.....	.....	31,133 00
Totals .....	.....	.....	8,406 50	2,898 00	6,997 50	8,598 50	4,452 30	.....	.....	.....	31,352 70

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, hardpan and clay .....	.....	.....	36,300	12,600	30,150	37,050	19,200	.....	.....	.....	.....	.....	135,300

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

SUMMERSTOWN.—Deepening alongside the wharf also making three cuts from wharf to the main channel.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'No. 1.' OWNER, C. S. BOONE DREDGING & CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Wingfield Basin, Wellington Co.....	June 3.....	Aug. 21.....	18 feet.	24,935½	\$ cts. 32,425 01	\$ Cts. 1 30
" " ".....	Sept. 28.....	Sept. 30.....				
" " ".....	Oct. 5.....	Nov. 7.....				
Lion's Head, Bruce Co.....	Aug. 24.....	Sept. 26.....	14 feet.	14,135½	2,428 90	20½
Total expenditure, \$35,353.91.				Total cubic yards removed, 39,071.		

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....			78 00	83 00	99 56	161 84	81 00				593 40
Contingencies.....			6,289 14	6,101 64	3,412 03	3,357 70	13,521 06	2,199 00			34,860 51
Totals.....			6,367 14	6,184 64	3,511 59	3,489 54	13,602 06	2,199 00			35,353 91



## SESSIONAL PAPER No. 19

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay, hardpan and boulders	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....	Cub. yds. ....
Rock	.....	.....	8,063	7,688 35	6,483 12	11,186 363½	4,507	738	.....	.....	.....	.....	33,420½
Totals	.....	.....	8,063	7,723	6,495½	11,549½	4,507	738	.....	.....	.....	.....	33,660½
													33,671

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

WINGFIELD BASIN.—Dredging of a channel from the lake into the Basin.

LIONS HEAD.—Widening and deepening the harbour by adding a cut to the southwesterly side. \*

9-10 EDWARD VII., A. 1910

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'No. 14.' OWNER, C. S. BOONE DREDGING &amp; CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Little Current, Algoma Co.,	April 23,	Nov. 14,	22 feet.	106,854	\$ cts. 190,703 90	\$ cts. 1 78½
Total expenditure, \$190,703.90.	Total cubic yards removed, 106,854.		Cost per cubic yard \$1.78½.			

## DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages .....	11 00		39 00		78 00		88 40		78 00		70 46		84 34		54 58						503 78	
Contingencies .....	6,664 32		31,363 08		29,370 00		37,647 00		27,234 00		27,436 92		24,470 55		6,074 25						190,290 12	
Totals .....	6,675 32		31,342 08		29,448 00		37,735 40		27,312 00		27,507 38		24,554 89		6,128 83						190,703 90	

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		February.		March.		Totals.	
	Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.	
Rock .....	3,744		17,586		16,500		21,150		15,900		15,414		13,747½		3,412½											106,854

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LITTLE CURRENT.—Continuation of the drilling and blasting and dredging of a channel 300 feet in width by about 1,800 feet in length to a depth of 23 feet below low water.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908 to March 31, 1909—Continued.  
DREDGE 'No. 5,' 'No. 8,' 'No. 6,' 'No. 15,' AND 'DOMINION.' OWNER GREAT LAKES DREDGING CO.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Mission and Kaministiquia Rivers (No. 8) in Thunder Bay Co. (Dominion)	May 4.....	December 1.....	22 fath.	644,883	\$ cts.	cts.
" " " " " "	May 9.....	December 5.....	22 "	1,082,723	100,261 38	161 1/2
" " " " " "	May 7.....	September 5.....	22 "	252,370	120,183 10	113 1/2
" " " " " "	September 7.....	December 6.....	22 "	133,810	25,221 44	60 1/2
" " " " " "	April 23.....	December 4.....	22 "	794,890	38,050 64	29 3/8
" " " " " "					102,926 56	12 1/2

Total expenditure, \$895,643.52. Total cubic yards removed, 2,858,881.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	160 00	595 00	728 00	756 00	728 00	744 90	761 00	504 60	84 00		5,153 10
Contingencies.....	707 16	35,811 33	47,180 41	56,952 01	65,024 98	78,194 94	61,121 22	43,833 68	1,664 09		390,490 42
Totals.....	867 16	36,407 33	47,908 41	57,708 61	65,752 98	78,939 84	61,882 82	44,428 28	1,748 09		395,643 52

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
No. 5.....	90,435	122,411	129,407	149,396	100,219	88,998	5,633						794,895
" 8.....	5,893	102,503	39,125	84,630	112,592	75,859	1,184						625,794
Boulders.....	69,722	127,618	79,097	3,968									252,570
" 6.....	40,741	43,646	154,587	152,905	182,376	149,824	5,111						1,032,723
Clay.....	87,861	135,913	164,146	24,666	56,182	3,458							121,590
No. 15.....				37,284	1,774								12,220
Rock.....				10,587	5,651								21,089
No. 15.....				4,851									
Totals.....	5,893	381,087	483,713	401,555	498,794	355,432	15,386						2,858,881

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

Work was done in the Kaministiquia, McKellar and Mission Rivers.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'No. 6,' OWNER, GREAT LAKES DREDGING CO.

Localities where Dredging was Performed.	Date.		Depth of Water made Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Nepigon River, Thunder Bay Co., .....	September 8, .....	December 5, .....	19 feet.	238,826	\$ 111,240 95	cts. 46½
Total expenditure, \$111,240.95. Total cubic yards removed, 238,826. Cost per cubic yard, 46½.						

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....						165 00	138 75	119 65	29 00		411 80
Contingencies.....						27,439 45	40,850 55	39,161 70	3,357 45		110,829 15
Totals .....						27,564 45	41,000 30	39,280 75	3,386 45		111,240 95

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand.....						61,021	90,779	79,565	7,461				238,826

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

NEPIGON River—Dredging consisted in making a channel 1,716 feet long and 150 feet wide.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE "PELEE" OWNER CHATHAM DREDGING AND GENERAL CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Ruscombe River, Essex Co.....	September 3.....	September 30.....	6 feet.	10,403	\$ 1,921 92	cts. 18 $\frac{1}{2}$

Total expenditure, \$1,921.92. Total cubic yards removed, 10,403. Cost per cubic yard, 18 $\frac{1}{2}$ cts.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts. 46 00	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....						1,875 92					
Totals.....						1,921 92					

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	March.	Totals.
Clay.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
				10,403								10,403

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RUSCOMBE RIVER—Opening up of channel at entrance to river, and providing channel as far as St. Joachim.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*  
 DREDGE 'SYDENHAM' OWNER, CANADIAN CONSTRUCTION CO.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed,	Expenditure.	Cost per Cubic Yard.
	From	To				
Victoria Harbour, Simcoe Co., .....	Nov. 2, .....	Dec. 8, .....	22 feet.	67,473	\$ cts. 8,539 62	cts. 12½

Total expenditure, \$8,539.62. Total cubic yards removed, 67,473. Cost per cubic yard, 12½c.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	.....	.....	.....	.....	.....	.....	.....	77 36	28 14	.....	165 50
Contingencies.....	.....	.....	.....	.....	.....	.....	.....	6,976 12	1,458 00	.....	8,434 12
Totals .....	.....	.....	.....	.....	.....	.....	.....	7,653 48	1,486 14	.....	8,539 62

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, sand and clay.....	.....	.....	.....	.....	.....	.....	.....	55,809	11,664	.....	.....	.....	67,473

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VICTORIA HARBOUR—Dredging in the channel to and the slip in front of the proposed site of the new C.P.R. grain elevator and wharfs.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'ST. LAWRENCE,' OWNER, MANLEY CO.

Localities where Dredging was Performed.	DATE.		Depth of Water under Zee.	Cubic Yards Removed.	Expenditure. \$ cts.	Cost per Cubic Yard.
	From	To				
Point Edward, Lambton Co.	May 9.	July 22.	22 feet.	150,794	\$ 27,435 50	Cts. 18 <sup>2</sup> / <sub>5</sub>
" "	August 1.	September 4.				
" " "	November 18.	November 21.	23 feet.	20,768	3,473 99	16 <sup>1</sup> / <sub>2</sub>
Sarnia, Lambton Co.	July 13.	July 15.				
" " "	July 23.	July 31.				
Thames River, Middlesex Co.	September 7.	November 14.	14 feet.	61,094	12,455 72	20 <sup>1</sup> / <sub>2</sub>

Total expenditure, \$43,365.21. Total cubic yards removed, 232,656.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	54 00	54 00	78 00	83 75	78 00	73 54	67 50	57 34	.....	.....	492 13
Contingencies	.....	4,537 80	7,857 35	8,221 56	7,788 24	5,464 15	6,226 10	2,777 87	.....	.....	42,873 08
Totals	.....	4,591 80	7,935 35	8,305 31	7,866 24	5,537 69	6,293 60	2,835 21	.....	.....	43,365 21

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, gravel and sand	25,210	43,652	47,342	43,268	27,910	30,966	14,368	.....	.....	.....	.....	.....	232,656

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

POINT EDWARD.—Removing of middle ground and providing safe depth of water along front of docks.

SARNIA.—Removal of two shoals opposite Sarnia.

RIVER THAMES.—Improving of channel at entrance to river.

9-10 EDWARD VII., A. 1910

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'TOGO.' OWNER, R. WEIDELL.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Thornbury, Grey Co.,	May 27	July 18	16 feet.	32,560	\$ cts.	Cts.
"	September 12	November 10	16 "	31,707	22,147 28	34½
Meaford "	July 20	September 5	21-22 "	23,668	8,245 77	34½

Total expenditure, \$30,393.05 Total cubic yards removed, 87,965.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	10 00	732 70	67 50	131 60	80 32	96 03	75 00	24 50			484 95
Contingencies			6,191 74	4,956 46	6,297 96	5,621 66	1,615 34				29,908 10
Totals		742 70	6,259 24	4,797 76	6,368 28	4,888 67	5,696 56	1,639 84			30,393 05

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, hardpan, clay, sand & mud		2,155	18,211	13,724	18,494	16,534	4,751						87,965

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

THORNBUARY.—Construction of a well-sheltered basin as an extension of the harbour.

MEAFORD.—Removal of the material in front of the new revetment wall, and deepening the westerly side of the harbour.



## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE "TRENTON," OWNER, R. WEDDELL.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Dark Channel, Hastings Co. ....	June 5. ....	November 7. ....	14 feet. ....	154,945	41,092 56	Cts. 264½

Total cubic yards removed, 154,945. Cost per cubic yard, 26½¢.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages .....	.....	52 00	69 70	83 38	80 25	80 24	83 26	.....	.....	.....	448 84
Contingencies .....	.....	.....	5,549 11	7,229 23	8,365 60	8,719 16	8,521 15	2,038 53	.....	.....	40,643 72
Totals .....	.....	52 00	5,609 81	7,312 61	8,675 85	8,799 34	8,604 41	2,038 53	.....	.....	41,092 56

## QUANTITIES AND DESCRIPTIONS OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, clay, clay and stone, sand and mud .....	.....	.....	21,056½	27,181½	33,060	33,535	32,395	7,600	.....	.....	.....	.....	154,828½
Rock .....	.....	.....	33½	89½	.....	.....	.....	.....	.....	.....	.....	.....	116½
Totals .....	.....	.....	21,090	27,275	33,060	33,535	32,395	7,600	.....	.....	.....	.....	154,945

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

DARK CHANNEL.—Continuation of the excavation of the channel leading from the Murray Canal to Trenton harbor.

9-10 EDWARD VII., A. 1910

Annual Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'WILCON.' OWNER, CHATHAM DREDGING AND GENERAL CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To				
Ruscombe River, Essex Co.....	September 28.....	December 11.....	6 feet .....	38,305	\$ cts. 4,078 10	Cts. 10½

Total expenditure, \$4,078.10. Total cubic yards removed, 38,305. Cost per cubic yard, 10½.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies. . . . .	.....	.....	.....	.....	.....	9 00	47 50	62 50	95 00	.....	144 00
	.....	.....	.....	.....	.....	229 00	1,022 40	2,197 00	455 70	.....	3,934 10
Totals. . . . .	.....	.....	.....	.....	.....	268 00	1,069 90	2,259 50	480 70	.....	4,078 10

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	March.	Totals.
Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay.....	.....	.....	.....	.....	.....	.....	10,224	21,970	4,557	.....	.....	38,305

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RUSCOMBE RIVER.—Opening up of a channel at entrance to river, and providing channel of sufficient depth to render this river navigable as far as St. Joachim.

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'CANADA,' OWNER, DOMINION DREDGING CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure, \$ etc.	Cost per Cubic Yard.
	From	To				
Vandrenil, Vandrenil Co	June 20. . . . .	Sept. 26. . . . .	9-11 feet.	83,308	\$ 18,647 23	Chas. 221 3/4

Total expenditure, \$18,647.23. Total cubic yards removed, 83,308. Cost per cubic yard, .221¢.

### DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January. February and March.	Totals.
Wages..	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies,	.....	.....	27 00	81 00	78 00	78 00	.....	.....	.....	.....	264 00
	.....	.....	2,313 52	7,109 36	5,061 74	3,898 61	.....	.....	.....	.....	18,383 23
Totals .....	.....	.....	2,340 52	7,250 36	5,139 74	3,916 61	.....	.....	.....	.....	18,647 23

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

—	April.	May.	June.	July.	August.	September	October.	November	December	January.	February.	March.	Totals.
Clay .....	Cub. yds. .. . . .	Cub. yds. .....	Cub. yds. 10,516	Cub. yds. 52,588	Cub. yds. 22,816	Cub. yds. 17,388	Cub. yds. .....	Cub. yds. .. . . .	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .. . . .	Cub. yds. 83,308

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VAUGHAN. — Four cuts were made along the front of the wharf; two other cuts were made from the wharf towards the main channel.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE, 'ALGONQUIN,' OWNER, GENERAL CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Chicoutimi, Chicoutimi Co. ....	July 18. . . . .	Nov. 14. . . . .	15-18 feet.	64,615	\$ cts. 23,291 17	Cts. 36

Total expenditure, \$23,291.17. Total cubic yards removed, 64,615. Cost per cubic yard, 36c.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages. ....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies. ....				3,245 12	5,892 70	5,551 60	6,797 75	1,454 00			
Totals ....				3,245 12	5,932 70	5,681 60	6,932 75	1,499 00			23,291 17

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Gravel and sand. ....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
				9,985	16,780	16,060	17,390	4,400					64,615

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

CHICOUTIMI.—Dredging was done at the wharf. The site for the extension of the wharf was dredged to 15 feet, and the approach to the wharf to 22 feet.

## SESSIONAL PAPER No. 19

Annual Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE, 'CENTRAL CITY.' OWNER, L. COHEN &amp; SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
St. Placide, Two Mountains Co.	June 1.	Nov. 25.	9 feet.	151,955	\$ cts. 33,270 01	Cts. 21½

Total expenditure, \$33,270.01. Total cubic yards removed, 151,955. Cost per cubic yard, 21½c.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.	\$ cts. 78 00	\$ cts. 78 00	\$ cts. 78 00	\$ cts. 81 00	\$ cts. 78 00	\$ cts. 78 00	\$ cts. 81 00	\$ cts. 63 00	\$ cts. 63 00	\$ cts. 537 00	\$ cts. 537 00
Stores and equipment.	19 50	19 50	19 50	19 50	19 50	19 50	19 50	19 50	19 50	19 50	19 50
Repairs.	4 03	4 03	4 03	4 03	4 03	4 03	4 03	4 03	4 03	4 03	4 03
Contingencies				5,208 48	4,861 55	5,620 10	7,031 53	4,942 87			32,709 48
Totals		101 53	5,222 95	5,289 48	4,939 55	5,698 10	7,112 53	4,905 87			33,270 01

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay and stones.	Cub. yds. 23,930	Cub. yds. 24,145	Cub. yds. 22,575	Cub. yds. 20,140	Cub. yds. 32,640	Cub. yds. 22,525	Cub. yds. 22,525	Cub. yds. 22,525	Cub. yds. 22,525	Cub. yds. 22,525	Cub. yds. 22,525	Cub. yds. 22,525	Cub. yds. 151,955

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

St. Placide.—Making several cuts around the wharf, also making a cut from the main channel to the wharf.

9-10 EDWARD VII., A. 1910

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE, 'CANADA,' OWNER, L. COHEN &amp; SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Dorion, Vaudrouil Co.....	Oct. 5 .....	Nov. 26.....	10 feet.	5,215	\$ cts. 20,489 50	\$ cts. 3 92½

Total expenditure, \$20,489.50. Total cubic yards removed, 5,215. Cost per cubic yard, \$3.92½c.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages, .....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies .....	.....	.....	.....	.....	.....	.....	81 00	70 00	.....	.....	151 00
	.....	.....	.....	.....	.....	.....	10,198 50	10,140 00	.....	.....	20,338 50
Totals.....	.....	.....	.....	.....	.....	.....	10,279 50	10,210 00	.....	.....	20,489 50

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	March.	Totals.
—	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Rock .....	.....	.....	.....	.....	.....	.....	2,615	2,600	.....	.....	.....	5,215

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

DORION.—A cut 500 feet long and 30 feet wide to make an approach to the basin.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'CHATEAUGUAY,' OWNER, L. COHEN & SON.

Localities where Dredging was Performed.	DATE		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Maskinonge River, Maskinonge Co.	May 28.	October 10.	8 feet.	66,945	\$ cts. 21,546 27	Cts. 32 3/4

Total expenditure, \$21,546 27. Total cubic yards removed, 66,945. Cost per cubic yard, 32 3/4 c.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February, and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingences.....	5 00	118 63	65 00	67 50	65 00	65 00	25 00	25 00	25 00	25 00	252 50
	118 63	3,498 72	4,841 80	5,850 49	5,401 77	1,042 36	1,042 36	1,042 36	1,042 36	1,042 36	21,253 77
Totals.....	123 63	3,563 72	4,909 30	5,915 49	5,406 77	1,567 36	1,567 36	1,567 36	1,567 36	1,567 36	21,546 27

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay and Sand.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	365	10,745	15,031	18,869	17,098	4,837	4,837	4,837	4,837	4,837	4,837	4,837	66,945

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

MASKINONGE RIVER.—Dredging three miles below the village and consisted in deepening and widening the channel.

9-10 EDWARD VII., A, 1910

## ANNUAL Report, from April 1, 1908, to March 31, 1909—Continued.

## DREDGE 'CAPITAL' OWNER, TURCOTTE &amp; DUFRESNE.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River Batiscan, Champlain Co.....	May 27....	Nov. 4.....	6—8 feet.	108,333	\$ 18,821 39	Cts. 17 <sup>1</sup> / <sub>2</sub>

Total expenditure, \$18,821.39. Total cubic yards removed, 108,333. Cost per cubic yard, 17 <sup>1</sup>/<sub>2</sub> c.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....	10 65	72 50	81 53	84 70	78 95	81 00	14 32	423 67	18,397 72	18,821 39	18,821 39
Totals.....	114 24	3,564 56	2,962 98	3,286 50	3,060 56	4,448 48	360 40	374 72	18,821 39	18,821 39	18,821 39

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Sand.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
.....	672	20,368	17,312	18,813	21,504	26,144	2,920	374 72	18,821 39	18,821 39	18,821 39	18,821 39	18,821 39

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER BATISCAN.—Making a cut at the mouth of the river from the main channel to the mill, and widening and deepening the channel above C.P.R. bridge.



## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE "DUKE OF YORK," OWNER, W. J. FOUTPORE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River St. Francis, Yamaoka Co.	May 8 . . . . .	Dec. 5 . . . . .	7—8 feet.	202,419	\$ cts. 37,010 88	Cts. 18½

Total cubic yards removed, 202,419. Cost per cubic yard, 18½c.

## DETAILS OF EXPENDITURE.

	April	May	June	July	August	September	October	November	December	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages . . . . .		56 75	76 85	70 35	70 53	68 50	84 50				427 48
Stores and equipment . . . . .					32 00						32 00
Pilferage and Towage . . . . .		5,222 70	5,410 63	3,474 10	5,794 42	5,499 36	99 00				99 00
Contingencies . . . . .								4,636 44	345 60		36,452 40
Totals . . . . .		5,279 45	5,487 48	3,544 45	5,896 95	5,666 86	6,153 65	4,636 44	345 60		37,010 88

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April	May	June	July	August	September	October	November	December	January	February	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Boulders, gravel, clay and sand . . . . .	29,015	32,572	19,423	29,175	30,552	33,504	1,920	25,758					202,419

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER ST. FRANCIS.—Making two cuts in front of the wharf. One other cut in front of the proposed wharf. One cut in the main channel opposite Tourville Mills. One more cut from the proposed wharf at Alenaki Springs, to the main channel.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'HURON.' OWNER, CANADA IMPROVEMENT CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River Jesus, Hochelaga Co.....	June 18 .....	November 14. . .	8 feet.	52,636	\$ cts. 15,672 63	Cts. 29½

Total expenditure, \$15,672 63. Total cubic yards removed, 52,636. Cost per cubic yard, 29½c.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts. 42 00	\$ cts. 83 49	\$ cts. 78 00	\$ cts. 83 49	\$ cts. 78 00	\$ cts. 78 00	\$ cts. 84 70	\$ cts. 42 00	\$ cts. 42 00	\$ cts. 408 19	\$ cts. 408 19
Contingencies.....	.....	.....	730 80	2,491 35	2,975 69	2,557 80	3,654 00	2,354 80	.....	.....	15,264 44
Totals.....	.....	.....	772 80	3,074 84	3,053 69	2,635 80	3,738 70	2,396 80	.....	.....	15,672 63

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Hardpan, boulders and clay.....	Cub. yds. 2,520	Cub. yds. 10,315	Cub. yds. 10,261	Cub. yds. 8,820	Cub. yds. 12,600	Cub. yds. 8,120	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. 52,636

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

River Jesus.—Making a channel from the wharf towards river Mascouche.

## SESSIONAL PAPER No. 19

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE, 'HERCULES,' OWNER, L. COHEN &amp; SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Dorion, Vaudreuil Co. ....	June 1. ....	June 15. ....	5 feet	4,480	\$ cts. 1,007 00	Cts. .37½
Beaucour, Nicolet Co. ....	June 29. ....	Nov. 17. ....	10-12 feet	86,262	15,001 09	.17½

Total expenditure, \$16,608 09. Total cubic yards removed, 90,742.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....	.....	.....	45 00	80 95	65 00	77 50	70 90	36 20	.....	.....	375 55
	.....	.....	1,689 58	3,570 68	3,468 68	2,874 70	3,039 60	1,579 30	.....	.....	16,232 54
Totals.....	.....	.....	1,744 58	3,651 63	3,533 68	2,952 20	3,110 50	1,615 50	.....	.....	16,608 09

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay and sand.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	.....	.....	5,254	21,064	20,404	16,910	17,880	9,290	.....	.....	.....	.....	90,742

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

DORION.—Making two cuts for the purpose of making an approach to the basin.

BEAUCOUR.—Cleaning out the cuts made along the bank in the basin the previous season. Six cuts were made, each 700 feet long and two cuts 2,000 feet long each.



## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909.—*Continued.*  
 DREDGE, 'MOHAWK,' OWNER, CANADA IMPROVEMENT COMPANY.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Port St. Francis, Maskinonge Co.,	July 3, .....	July 30, .....	14 feet	12,098	\$ cts. 2,757 56	Cts. .22½
St. Pierre les Becquets, Nicolet Co. .	Aug. 21, .....	Nov. 10, .....	8 "	39,390	8,102 91	.20½

Total expenditure, \$10,860 47. Total cubic yards removed, 51,488.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	.....	.....	15 00	81 00	30 00	78 00	81 00	24 00	.....	.....	309 00
Contingencies.....	.....	.....	11 91	2,661 56	475 00	3,613 00	3,558 00	232 00	.....	.....	10,551 47
Totals.....	.....	.....	26 91	2,742 56	505 00	3,691 00	3,639 00	256 00	.....	.....	10,860 47

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand. ....	.....	.....	12,098	2,375	18,965	17,790	1,160	.....	.....	.....	.....	.....	51,488

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT ST. FRANCIS.—Two cuts made for the purpose of cleaning in front of the wharf. Also three other cuts were made from wharf to the main channel.  
 ST. PIERRE LES BECQUETS.—A cut from main channel towards the wharf, also cleaning up a cut made the previous season.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE, 'MOHICAN,' OWNER, CANADA IMPROVEMENT COMPANY.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River Jesus, Hochelaga Co. ....	July 4, .....	Sept. 5, .....	8 feet	22,838	\$ cts. 4,765 10	Cts. 204 <sup>10</sup> / <sub>100</sub>
Total expenditure, \$4,765.10. Total cubic yards removed, 22,838. Cost per cubic yard, 204 <sup>10</sup> / <sub>100</sub> cents.						

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages ..	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....	.....	.....	36 00	81 00	78 00	.....	.....	.....	.....	.....	195 00
	.....	.....	.....	1,074 50	3,215 60	278 90	.....	.....	.....	.....	4,570 10
Totals.....	.....	.....	36 00	1,155 50	3,294 60	278 90	.....	.....	.....	.....	4,765 10

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Gravel and sand ..	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	.....	.....	.....	5,373	16,083	1,382	.....	.....	.....	.....	.....	.....	22,838

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER JESUS. — A cut was cleaned out, starting above McDonald's wharf towards Masconche river.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE NO. 2, OWNER, DOMINION DREDGING COMPANY.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Chateauguay, Chateauguay Co.	June 9.	November 10.	8 ft. to 10 ft.	57,221	\$ 13,006 27	Cts. 221 $\frac{1}{2}$

Total cubic yards removed, 57,221. Cost per cubic yard, 22 $\frac{1}{2}$ ¢.

## DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages					65 00		81 00		78 00		78 00		81 00		30 02						414 62	
Contingencies					829 18		1,628 83		1,831 28		3,170 20		4,075 28		1,056 88						12,591 65	
Totals					895 18		1,709 83		1,909 28		3,248 20		4,156 28		1,087 50						13,006 27	

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		February.		March.		Totals.	
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel					3,769		7,390		8,324		14,410		18,524		4,804										57,221	

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

CHATEAUGUAY.—Deepening and widening the channel at the mouth of the Chateauguay River also opposite Ross' Point.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE NO. 3. OWNER, DOMINION DREDGING COMPANY.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
L'Assomption, L'Assomption Co.,	July 17	November 11	13 ft.—14 ft.	89,994½	\$ c.	cts.
				15,165 65		16½

Total expenditure, \$15,165.65. Total cubic yards removed, 89,994½. Cost per cubic yard, 16½.

## DETAILS OF EXPENDITURE

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Wages				40 98	86 50	78 00	84 07	30 00			319 55
Contingencies				1,803 15	3,436 76	3,853 92	4,816 26	1,435 41			14,845 50
Totals				1,844 13	3,523 26	3,931 92	4,900 33	1,465 41			15,165 65

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, sand and stone				7,780	20,518	23,068½	29,358½	9,330					89,994½

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

L'Assomption.—Deepening the channel and removing a shoal at the entrance of L'Assomption River.



## SESSIONAL PAPER No. 19

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

## DREDGE 'No. 6,' OWNER, GASPARD DE SERE.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Three Rivers, St. Maurice Co. ....	July 17. ....	July 31. ....	14 ft. — 15 ft. ....	642	\$ c. 313 89	Cub. 483 2

Total cubic yards removed, 642. Cost per cubic yard, 483 2.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Wages .....	.....	.....	.....	57 09	.....	.....	.....	.....	.....	57 40	57 40
Contingencies .....	.....	.....	.....	256 80	.....	.....	.....	.....	.....	256 80	256 80
Totals .....	.....	.....	.....	313 89	.....	.....	.....	.....	.....	.....	313 89

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay ..	.....	.....	.....	642	.....	.....	.....	.....	.....	.....	.....	642

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

THREE RIVERS.—A cut was made above Bureau wharf in the channel.

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'No. 6.' OWNER, L. COHEN & SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Maskinonge River, Maskinonge Co.....	September 7.....	November 10..	8 ft.....	24,971	\$ c. 4,684 04	Cts. 18½

Total expenditure, \$4,684.04. Total cubic yards removed, 24,971. Cost per cubic yard, 18½c.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November	December	January February and March.	Totals.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Wages.....					13 00	75 00	78 20	12 00			178 20
Contingencies .....						4,472 30	2,274 30	759 24			4,505 84
Totals.....					13 00	1,547 30	2,352 50	771 24			4,684 04

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand and clay.....					12,635	8,118	4,218						24,971

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

MASKINONGE.—Deepening and widening the channel in this river, 2½ miles below the village. One cut was made 8,700 feet long and 30 feet wide.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'No. 2,' OWNER, T. F. MOORE COMPANY.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Blanche Shoals, Labelle Co. ....	August 11 . . .	November 23. . .	12 ft. ....	53,010	\$ c. 11,433 60	Cts. .21½

Total expenditure, \$11,433.60. Total cubic yards removed, 53,010. Cost per cubic yard, .21½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Wages.....					64 50	80 00	83 00	74 00			391 50
Contingencies.....					758 10	1,975 05	4,788 00	3,610 95			11,132 10
Totals ..					822 60	2,055 05	4,871 00	3,684 95			11,433 60

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand.....					3,610	9,405	22,800	17,195					53,010

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

BLANCHE SHOALS.—Continuation of the work done the previous season, being the removing of a shoal which obstructed the main channel.



## SESSIONAL PAPER No. 19

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'No. 1' OWNER, T. F. MOORE CO.

Localities where Dredging was Performed.	DATE		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Blanche Shoals—Labelle Co.	Aug 25.....	Nov. 23 .....	12 feet	27,500	\$ cts. 6,030 50	cts. .21½

Total expenditure, \$6,030.50. Total cubic yards removed, 27,500. Cost per cubic yard, 21½c.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies .....					18 50	80 00	83 00	74 00			255 50
					189 00	2,089 50	1,963 50	1,533 00			5,775 00
Totals.....					207 50	2,169 50	2,046 50	1,607 00			6,030 50

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals
Sand .....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
			9 00	9,950	9,350	7,300							27,500

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

BLANCHE SHOALS.—Continuation of the work done the previous season, being the removing of a shoal which obstructed the main channel.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1908—Continued.  
DREDGE 'OTTAWA.' OWNER, W. J. POUPORE CO.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River du Loup (en haut)—Maskinonge Co .....	Oct. 12 .....	Oct. 15 .....	8 feet.	5 200	\$ cts. 1,100 00	cts. .21½

Total expenditure, \$1,106. Total cubic yards removed, 5,200. Cost per cubic yard, .21½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages .....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies .....	.....	.....	.....	.....	.....	.....	14 00	.....	.....	.....	14 00
Totals .....	.....	.....	.....	.....	.....	.....	1,092 00	.....	.....	.....	1,092 00
	.....	.....	.....	.....	.....	.....	1,106 00	.....	.....	.....	1,106 00

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay .....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	.....	.....	.....	.....	.....	.....	5,200	.....	.....	.....	.....	.....	5,200

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER DU LOUP (en haut)—Work consisted of cleaning and deepening in front of the Government wharf.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE "ONEIDA," OWNER, CANADA IMPROVEMENT CO.

Localities where Dredging was Performed	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard
	From	To				
Hudson—Vandrevil Co. ....	Aug. 11	Oct. 10	10 feet	31,372½	\$ cts. 5,830 60	cts. .187½

Total expenditure, \$5,830 60. Total cubic yards removed, 31,372½. Cost per cubic yard, .187½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages .....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies .....	.....	.....	.....	.....	54 00	79 55	1,123 20	.....	.....	.....	133 55
	.....	.....	.....	.....	1,660 05	2,913 80	1,123 20	.....	.....	.....	5,097 05
Totals.....	.....	.....	.....	.....	1,714 05	2,993 35	1,123 20	.....	.....	.....	5,830 60

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay and stones.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	.....	.....	.....	.....	9,222½	15,910	6,240	.....	.....	.....	.....	.....	31,372½

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

HURON.—Cleaning the approaches to and around wharf. Ten cuts were made 400 to 500 feet long each and 30 feet wide.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'PREMIER,' OWNER, L. COHEN & SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Three Rivers, St. Maurice Co .....	Sept. 24.	Nov. 19.	27 ft. 28½ ft.	30,066	\$ cts. 12,170 40	cts. 40½
Total cubic yards removed, 30,066.						

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....						15 00	81 00	48 00			144 00
						1,000 40	6,700 80	1,325 20			12,026 40
Totals.....						1,015 40	6,781 80	4,373 20			12,170 40

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Sand.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
				2,501	16,752			10,813					30,066

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

THREE RIVERS. — A cut was started at this place above the Government wharf, so as to build a coal wharf and make a place of refuge for vessels.



## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'PREMIER' OWNER, CANADA IMPROVEMENT CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
River Ouello, Kamouraska Co., .....	July 27.	Sept. 12.	15 feet	13,916½	\$ cts. 6,990 39	cts. 49½

Total expenditure, \$6,990.39. Total cubic yards removed, 13,916½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....			25 00	65 00		112 50					202 50
Contingencies .....			840 00	4,533 89		1,324 00					6,697 89
Totals.....			865 00	4,598 89		1,436 50					6,900 39

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and stones.....			1,750	9,416½	2,750								13,916½

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER OUELLE.—Two cuts were made about 100 feet wide and 300 feet long.

9-10 EDWARD VII., A. 1910

ANNUAL REPORT from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'OTTAWA.' OWNER CANADA IMPROVEMENT CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Nicolet, Nicolet Co. ....	June 15. ....	Oct. 10. ....	10 feet.	44,395	\$ cts. 10,073 90	\$ cts. .294½

Total expenditure, \$10,073.90. Total cubic yards removed, 44,395.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
—	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages .....	.....	.....	42 00	82 00	78 00	78 00	27 00	.....	.....	.....	\$ cts. 307 00
Contingencies .....	.....	.....	1,224 30	2,450 10	2,691 50	2,253 00	858 00	.....	.....	.....	9,756 90
Totals .....	.....	.....	1,266 30	2,532 10	2,679 50	2,311 00	885 00	.....	.....	.....	10,073 90

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
—	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand .....	.....	.....	5,565	12,295	11,425	10,150	3,900	.....	.....	.....	.....	.....	44,395

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

NICOLET.—Cleaning out the channel alongside the breakwater.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'PRINCE GUY,' OWNER, W. J. POUPORE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Louisville, Maskinonge Co .....	May 23 .....	July 4 .....	6 ft. 8 ft.	23,142	\$ cts. 5,234 93	cts. 22½

Total expenditure, \$5,234 93. Total cubic yards removed, 23,142.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February, and March.	Totals.
Wages .....	\$ cts. 17 50	\$ cts. 1,099 40	\$ cts. 65 00	\$ cts. 27 50	\$ cts. 383 53	\$ cts. .....	\$ cts. .....	\$ cts. .....	\$ cts. .....	\$ cts. .....	\$ cts. 116 60
Contingencies .....	.....	.....	3,642 00	.....	.....	.....	.....	.....	.....	.....	5,124 93
Totals .....	.....	1,116 90	3,707 00	411 03	.....	.....	.....	.....	.....	.....	5,234 93

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay .....	Cub. yds. 4,780	Cub. yds. 1,768	Cub. yds. 16,394	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. 23,142

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.  
LOUISVILLE.—Two cuts were made 600 feet long by 40 feet wide in front of the wharf.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
 DREDGE 'PRINCE LOUIS' OWNER, W. J. POUPORE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Yamachiche River, St. Maurice Co. ....	May 28. . . . .	September 5 . . . .	5 feet.	119,832	\$ cts. 23,883 26	cts. 197 1/2
Total expenditure, \$23,883.26. Total cubic yards removed, 119,832. Cost per cubic yard, 197 1/2 cts.						

## DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages . . . . .	10	00	97	00	75	00	65	65	75	00	65	65	75	00	65	65	75	00	65	65	75	00
Contingencies . . . . .	355	11	7,243	60	7,713	60	7,562	80	7,562	80	7,562	80	7,562	80	7,562	80	7,562	80	7,562	80	23,635	11
Totals . . . . .	365	11	365	11	7,340	60	7,780	10	7,628	45	7,628	45	7,628	45	7,628	45	7,628	45	7,628	45	23,883	26

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		February.		March.		Totals.	
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay . . . . .	.....	1,560	36,218	40,440	37,814	3,890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119,832

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

YAMACHICHE—One cut was made to widen and deepen the channel at the entrance of this river.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'PRINCE WILLIAM' OWNER, W. J. POUPORE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure, \$ cts.	Cost per Cubic Yard.
	From	To				
River du Loup (en haut) Muskinonge Co	July 6	Sept. 12	8 feet	55,238	18,886 42	18½
"	Oct. 21	Nov. 13	"	47,735	12,168 42	14½
Yamachiche, St. Maurics Co	Sept. 14	Oct. 20	6 feet, 8 feet	84,126	533 52	18
River St. Francis, Yamaska Co.	Nov. 20	Nov. 21	8 feet	2,964		

Total expenditure, \$31,588.36. Total cubic yards removed, 190,063.

## DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages						47 50	67 50	67 50			92 95		97 00		64 00						388 95	
Contingencies						3,243 86	6,033 57	6,033 57			7,532 94		10,010 32		4,278 72						31,199 41	
Totals						3,311 36	6,101 07	6,101 07			7,725 89		10,107 32		4,342 72						31,588 36	

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		Totals.	
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand			14,392		28,642		46,742		70,788		29,499										190,063	

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER DU LOUP (en haut)—Cleaning around Government wharf and Mill wharf. Work was also done at the mouth of this river.  
 YAMACHICHE—Cleaning out a cut from the main channel to the entrance of the river.  
 RIVER ST. FRANCIS—Cleaning a cut previously made at the entrance of this river.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'PONTIAC' OWNER, W. J. POUPORE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
River St. Francis, Yamaska Co.	May 11	June 11	6 feet, 7 feet.	72,384	\$ cts.	cts.
River du Loup (Louisville Mill)	Nov. 2	Nov. 21	6 feet.	20,645	13,205 65	18 <sup>4</sup> / <sub>8</sub>
Yamaska, Yamaska Co.	June 11	July 14	6 feet, 8 feet.	147,124	4,625 46	22 <sup>3</sup> / <sub>8</sub>
	July 15	Oct. 30			26,732 82	18 <sup>7</sup> / <sub>8</sub>

Total expenditure, \$44,563.33. Total cubic yards removed, 240,153.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	57 25	65 50	47 75	65 00	67 00	67 00	81 00	98 50			492 00
Contingencies	4,904 64	5,292 05	4,912 52	6,760 80	6,760 80	8,036 88	8,817 12	5,303 92			44,071 93
Totals		4,961 89	5,357 55	4,980 27	6,825 80	8,067 88	8,898 12	5,442 42			44,563 93

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, gravel, sand and quicksand	27,248	25,646	37,560	44,616	48,984	29,744							240,153

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER ST. FRANCIS—Two cuts were made on the west side, along the bank, to deepen for a proposed wharf. Two cuts were also made near the entrance of the river.  
RIVER DU LOUP—Channeling in front and around the wharf of the Tourville Mills.  
YAMASKA—Two cuts were made in the main channel near the aux Citrons.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'ST. PIERRE,' OWNER, ANTOINE ST. PIERRE.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure, \$ cts.	Cost per Cubic Yard.
	From.	To.				
St. Maurice River, Champlain Co.	May 15 .....	Aug. 31 .....	9-12 feet.	170,800		cts.
	Sept. 10 .....	Sept. 30 .....				
	Oct. 1 .....	Oct. 3 .....				
	Nov. 16 .....	Nov. 17 .....				
Godfroye River, Nicolet Co.	Sept. 1 .....	Sept. 9 .....	12 feet.			
	Oct. 5 .....	Nov. 14 .....		60,825	8,039 25	13½

Total expenditure, \$25,473.25. Total cubic yards removed, 231,625.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages .....		45 00	78 00	81 00	78 00	78 00	81 00	45 00			486 00
Contingencies .....		1,068 00	4,979 50	4,979 50	4,331 00	3,285 40	4,889 10	1,905 25			24,987 25
Totals .....		1,143 00	4,577 00	5,060 50	4,409 00	3,363 40	4,970 10	1,950 25			25,473 25

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, clay, sand and boulders .....	10,380	44,990	49,795	43,310	29,320	38,130	15,100						231,625

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ST. MAURICE RIVER—Deepening the east channel in front of Grants Mills and the west channel near Dalton wharf. The channel was also deepened and widened near Baptist Island.

GODFROYE RIVER—Deepening in front of the Government wharf.

9-10 EDWARD VII., A. 1910

## ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

## DREDGE 'CHALLENGE.' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To				
St. Jean Des Chaillons, Lotbinière Co .....	( May 11 .....	June 9 .....	9 feet.	11,950	\$ cts.	cts.
Pointe Lévis, Lévis Co .....	( Oct. 1 .....	Oct. 31 .....				
Drolet Basin, Québec Co. ....	June 11 .....	July 22 .....	12 feet.	6,750	12,058 27	44½
	July 23 .....	Sept. 30 .....				
				8,550		

Total expenditure, \$12,058 27. Total cubic yards removed, 27,250. Cost per cubic yard, .44½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages .....	1,397 41	1,052 89	550 00	622 00	518 55	537 50	500 40	485 00	150 82	1,884 64	7,759 21
Fuel .....		246 00	26 51	206 10		252 36	32 50	298 01		71 07	1,048 17
Provisions .....		189 74	160 95	199 02	194 60	202 34	204 53	200 17	58 68		1,410 03
Stores and equipment .....	183 89	7 70	4 00	107 08	13 26	6 86	28 23			24 20	374 72
Repairs .....	33 11	23 56	200 73	150 83	9 00	147 17	0 70	12 54	30 00	259 06	866 70
Pilotage and towage .....				4 00			25 00	315 00		179 75	523 75
Contingencies .....	28 65	11 05	2 35				10 74		27 90		80 69
Totals .....	1,642 56	1,530 94	944 54	1,289 03	735 41	1,146 85	862 10	1,920 72	267 40	2,418 72	12,058 27



## SESSIONAL PAPER No. 19

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, hardpan, boulders, clay and sand .....		2,250	4,900	5,900	4,500	2,650	7,050						27,250

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

St. JEAN DES CHAÎLLOIS.—Five cuts were made in the channel.

POINTE LEVIS.—Work was done at the pier in front of the pulp wood conveyer.

QUEBEC.—Work was done at Drolet Basin and consisted in dredging at the entrance to the shipyard.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'INTERNATIONAL' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To				
Grand Trunk Basin, Lewis Co.	May 18.	June 6.	12 feet.	9,500	{	cts.
Louise Basin, Quebec, Quebec Co.	June 8.	June 13.	30 feet.	1,500		
Quebec Harbour, Quebec Co.	June 13.	Nov. 14.	46 feet.	85,750		
Sorel, Richilieu Co.	Nov. 16.	Nov. 21.	.....	2,250		
					19,830 42	.20

Total expenditure, \$19,830.42. Total cubic yards removed, 99,000. Cost per cubic yard, .20c.

## DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages.	597 50		640 14		975 00		975 64		999 50		991 00		1,021 55		1,004 50		687 77		1,102 46		8,995 06	
Fuel.			1,333 15		45 90				285 31				113 08								1,977 44	
Provisions.	196 15		221 29		343 56		387 42		349 04		387 34		340 32		343 50		235 94		356 25		3,600 81	
Stores and equipment.	810 97		569 50		38 69		2 00		42 95		0 40		115 05				36 84				1,616 40	
Repairs.	28 33				132 50		359 53				3 50		1,341 71				83 34		29 25		1,978 16	
Contingencies.	110 00		1,854 85						27 40								152 80		27 50		2,172 55	
Totals.	1,742 95		4,818 93		1,535 65		1,674 59		1,707 70		1,358 74		2,931 71		1,348 00		1,196 69		1,515 46		19,830 42	

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		February.		March.		Totals.	
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand.	5,750	14,250	16,560	16,000	17,250	17,750	11,500																		99,000	

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

QUEBEC.—Deepening the basin between the Grand Trunk Railway Wharf and the shore. Work done at Louise Basin consisted in deepening between the wharf and the shore. Work at Quebec harbour consisted in deepening and levelling the bottom for new cribs.

SOREL.—Work consisted in dredging the harbour opposite new wharf.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'No. 2.' OWNER, DEPARTMENT OF PUBLIC WORKS.

Locality where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Rivière du Lièvre, Labelle Co. ....	July 15. ....	Nov. 7. ....	9 feet.	13,177	\$ cts. 6,586 91	Cts. .49½
Total cubic yards removed, 13,177. Cost per cubic yards, 49½¢.						

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts. 170 00	\$ cts. 334 00	\$ cts. 357 55	\$ cts. 434 10	\$ cts. 403 00	\$ cts. 410 25	\$ cts. 405 00	\$ cts. 420 04	\$ cts. 176 26	\$ cts. 368 66	\$ cts. 3,478 86
Fuel.....	.....	.....	.....	1,274 10	36 00	.....	.....	.....	.....	.....	1,310 10
Provisions.....	.....	.....	.....	155 12	155 00	153 00	153 00	195 00	.....	53 23	1,050 95
Stores and equipment.....	5 00	99 60	87 00	.....	.....	.....	.....	139 04	.....	44 08	1,827 89
Repairs.....	.....	.....	129 77	65 43	.....	19 88	9 39	74 52	.....	120 92	356 89
Photage and towage.....	.....	.....	46 75	.....	.....	.....	.....	.....	.....	.....	25 25
Contingencies.....	.....	27 10	13 22	.....	.....	.....	9 35	.....	.....	7 30	56 97
Totals.....	175 00	490 70	659 54	1,928 75	594 00	583 13	576 74	838 60	176 26	594 19	6,586 91

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total.
Clay.....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. 3,053	Cub. yds. 2,681	Cub. yds. 2,024	Cub. yds. 4,459	Cub. yds. 329	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. .....	Cub. yds. 13,177

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

Rivière du Lièvre.—Dredging consisted in removing part of landslide from the channel as well as deepening and widening the channel at the foot of the locks. The entrance to the locks was also cleaned out.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'MATTAWA,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Locality where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Lake Nipissing, Parry Sound Co.	June 8.	Nov. 28.	10—15 feet.	65,950	\$ cts. 10,167 78	Cts. .15½

Total expenditure, \$10,167.78. Total cubic yards removed, 65,950. Cost per cubic yard, .15½.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.	719 00	491 34	420 00	418 54	417 10	420 00	650 35	436 47	100 32	348 87	4,421 99
Fuel.	9 50	673 75		281 14	499 33	49 55	378 20	207 09			2,098 56
Provisions.	32 00	123 00	123 00	219 83	76 60	153 00	183 88	148 00	23 13	36 00	1,118 34
Stores and equipment.	34 59	59 44	101 35	18 56	25 18		169 15	86 46			562 88
Repairs.	523 74	70 63	6 00	10 50		71 35	62 58	48 74		248 83	1,450 17
Contingencies.	76 08	100 00	40 75		21 75	9 00	577 89	29 35	21 06	42 96	915 84
Totals.	1,394 91	1,518 16	691 10	948 57	1,017 66	702 90	2,022 05	953 11	144 51	744 81	10,167 78

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand.	14,200	14,200	7,750	14,800	7,800	7,200							65,950

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LAKE NIPISSING.—One cut was cleaned up for a distance of 750 feet in the main channel at the mouth of the Sturgeon River. Two cuts were made in the channel at the mouth of the Little Sturgeon River. Work was also done in the channel at the mouth of the South River.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE "NIPissing," OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure. \$ cts.	Cost per Cubic Yard.
	From	To				
Gatineau River, Wright Co. ....	June 13.	July 25.	5-7 feet.	17,640	.....	18
Fassetts, Labelle Co. ....	July 27.	August 15.	12 "	13,455	.....	
Rockland, Russell Co. ....	August 17.	" 29.	12 "	6,680	.....	
Hawkesbury, Prescott Co. ....	September 1.	" 19.	10 "	9,495	.....	
Papineauville, Labelle Co. ....	" 28.	October 16.	10 "	10,035	12,657 65	
Montebello, Labelle Co. ....	October 12.	" 24.	10 "	7,110	.....	
L'Orignal, Prescott. ....	" 26.	November 14.	.....	6,330	.....	
Green Shoal Lighthouse, Russell Co. ....	November 16.	" 21.	.....	90	.....	

Total expenditure, \$12,657.65. Total cubic yards removed, 70,245.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages .....	1,352 41	961 69	450 00	612 61	450 00	450 00	456 00	450 00	.....	1,647 87	6,810 49
Fuel .....	.....	692 21	.....	525 99	.....	560 60	.....	.....	145 18	71 06	1,935 04
Provisions .....	.....	151 75	149 40	.....	181 68	184 87	162 00	178 88	112 16	.....	1,120 14
Stores and equipment .....	.....	3 00	.....	71 78	10 35	.....	.....	.....	53 23	.....	138 36
Repairs. ....	151 73	419 38	23 00	10 14	91 45	54 75	.....	.....	14 80	1,770 48	2,535 73
Pilotage and towage .....	.....	.....	.....	.....	.....	.....	.....	20 00	32 14	.....	52 14
Contingencies .....	.....	.....	.....	.....	.....	5 75	.....	.....	.....	.....	5 75
Totals.....	1,484 14	2,227 94	622 40	1,220 52	732 88	1,235 97	618 00	648 88	357 51	3,489 41	12,657 65

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'NIPissing'—Continued.

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April	May	June	July	August	September	October	November	December	January	February	March	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, hardpan and boulders, .....	.....	.....	9,090	13,140	14,895	12,285	16,875	3,960	.....	.....	.....	.....	70,245

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

GATINEAU RIVER—Removing of a sand shoal which obstructed the channel.  
 FASSETT—The water was deepened.  
 ROCKLAND—Deepening the channel in front of Edwards saw-mill.  
 HAWKESBURY—Removing a sand shoal which had formed in the channel.  
 PAINEBURY—Work was performed in the channel opposite the saw-mill.  
 PAINEBURY—Work was performed in the channel opposite the saw-mill.  
 MONTREAL—Deepening as well as making a basin.  
 L'ORIGINE—Cleaning out and deepening to allow barges to load alongside.  
 GREEN SHOALS—Removing material which had fallen in channel.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'OTTAWA.' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Quebec Custom's Basin, Quebec Co. ....	August 10 . . .	November 28. . .	15-23 feet.	47,345	\$ cts.	Cts.
" Drolet's Basin . . .						
" Breakwater pier . . .						

Total expenditure, \$10,547.60. Total cubic yards removed, 47,345.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages . . . . .				264 38	723 53	865 36	422 91	471 81	1,285 13	853 40	4,886 52
Fuel . . . . .					1,126 50	10 30			256 50	24 75	1,418 05
Provisions . . . . .				176 30	273 68	282 60	157 54	167 26	233 28	297 06	1,567 72
Stores and equipment . . . . .					7 54	184 05	2 00		38 66		232 25
Repairs . . . . .						445 92	137 84		198 69	1,289 38	2,181 83
Pilotage and towage . . . . .						50 00					50 00
Contingencies . . . . .						186 13			22 10	3 00	211 23
Totals . . . . .				440 68	2,131 25	2,054 36	780 29	639 07	2,034 36	2,467 59	10,547 60

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand, hardpan boulders and gravel . . . . .					4,925	7,950	16,110	18,360					47,345

QUEBEC.—Deepening inside the Custom's Basin. Work was also performed at Drolet's Basin. Dredging done at Breakwater pier.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'ONTARIO.' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Port Stanley, East Essex Co.....	April 20.....	August 22.....	16-23 feet.	40,365		
Pelée Island, Essex Co.....	August 24.....	November 21.....	8 24 "	29,980	\$ cts.	Cts.
					9,460 80	14 7/8

Total expenditure, \$9,460 80. Total cubic yards removed, 64,345.

DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages.....	430 92		480 88		459 49		450 00		453 77		450 00		450 00		433 95		130 00		65 00		3,864 01	
Fuel.....	11 65		216 56		177 10		246 20		258 97		270 12		238 95		326 80						1,846 35	
Provisions.....	122 20		124 16		271 40		153 00		153 00		153 00		217 88		153 00						1,348 14	
Stores and equipment.....	19 15		3 94		23 20		74 90		19 55		219 94		50 65		8 00						428 33	
Repairs.....	40 31		181 35		8 06		1,107 99		79 00		74 74		9 51		25 35						1,586 32	
Pilotage and towage.....									100 00				85 00								185 00	
Contingencies.....	28 74		29 30		6 05		16 51		11 31		25 53				91 21						202 85	
Totals.....	752 97		1,030 19		945 31		2,108 60		1,075 60		1,193 83		1,000 99		1,093 31		130 00		65 00		9,460 80	

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		Totals.	
	Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.	
Gravel, clay and sand.....	1,035		9,000		11,295		9,855		9,150		2,850		11,610		5,650						64,345	

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

POINT STANLEY.—Work at this place was started dredging crib seats for new breakwater. Three cuts were also made at north-west end of breakwater. On each side of entrance to harbour four cuts were made. Inside of harbour on each side of west pier two cuts were made through shoal spot. On each side of harbour to entrance of turning basin five cuts were made. A shoal was removed on same side further north.

PELEE ISLAND.—Work done consisted in making one cut on south side of McCormick's stone quarry dock. Also dredging at the lighthouse marsh.



## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'PROGRESS,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Quebec, Quebec Co.	May 2	June 20	12 15 feet.	11,265	\$ ets.	Cts.
Kimouski, Kimouski Co.	June 22	September 26	15 "	65,800	20,934 28	27 ½

Total expenditures, \$20,934.28. Total cubic yards removed, 77,065.

## DETAILS OF EXPENDITURE.

	April	May	June	July	August	September	October	November	December	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	946 00	1,030 52	1,012 50	1,035 00	1,142 91	1,130 05	1,139 00	588 00	294 92	860 53	9,139 46
Fuel	87 96	213 03		436 90	1,244 78	215 45	281 72				2,475 86
Provisions	343 98	351 72	392 50	526 19	428 86	421 48	439 87	239 50	68 50	207 28	3,420 58
Stores and equipment	810 97	201 09	298 49	201 09	838 51		141 80		48 06		2,361 92
Repairs	110 81	163 57	4 68	240 51	452 95		263 15		25 00	22 56	1,283 23
Pilotage and towage									150 00	85 00	235 00
Contingencies			3 00	13 50	14 42		80 80	14 60	872 21	1,019 60	2,018 13
Totals	2,255 72	1,758 86	1,671 17	2,077 09	3,314 58	2,796 31	2,283 07	1,123 82	1,458 69	2,194 97	20,934 28

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April	May	June	July	August	September	October	November	December	January	February	March	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand	5,565	23,900	20,400	16,300									77,065

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

QUEBEC.—Operations consisted in deepening the entrance to Drolets ship-yard.  
 KIMOUSKI.—Work consisted in deepening and widening the channel from the wharf to deep water.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'QUEEN,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
New Liskeard, Nipissing Co.	June 19.	Oct. 31.	9-12 feet.	29,682	\$ cts. 10,388 33	Cts. 324
Ville Marie, Pontiac Co.	Nov. 1.	Nov. 14.	12 feet.	2,520		
Total expenditure, \$10,388.33.			Total cubic yards removed, 32,202.		Cost per cubic yard, .324c.	
DETAILS OF EXPENDITURE.						

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	375 83	548 13	477 66	466 94	478 05	465 00	475 00	575 40	109 43	362 50	4,333 94
Fuel.....	449 20	888 13	850 00	39 00							2,236 33
Provisions.....	123 65	248 46	237 78	237 78	108 00	168 00	198 35	178 82	52 02	24 60	1,488 53
Stores and equipment.....	43 90	375 51	8 00	108 80	237 54	66 53	50 78	40 32	50 78	40 32	931 38
Repairs.....	158 08		97 61	41 35	170 52	103 30	128 85		84 22	158 95	942 58
Pilotage and towage.....						119 00		81 00			200 00
Contingencies.....	30 00	50 36	11 15			34 00	83 17	8 25	15 44	23 20	255 57
Totals.....	1,180 66	2,110 59	1,543 87	893 87	1,054 11	889 30	951 60	843 47	311 89	608 97	10,388 33

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay.....			1,704	7,088	7,180	8,058	5,052	2,520					32,202

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

NEW LISKEARD.—Dredging of a basin in front of wharf.  
VILLE MARIE.—Two cuts were made. This work was done to remove material that had fallen in during the spring freshet.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'RICHELIEU' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
St. Johns Yacht Club, Iserville Co.	May 21.....	June 6.....	6—10 feet.	2,900	} \$ cts. 6,008 52	Cts. .19½
Isle aux Noix, St. Johns Co.	June 9.....	Sept. 25.....	8—10 feet.	27,750		
St. Johns.	Sept. 28.....	Dec. 4.....	8—9 feet.	7,062		
Total expenditure, \$6,008.52.			Total cubic yards removed, 37,712.		Cost per cubic yard, .19½.	
DETAILS OF EXPENDITURE.						

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February, and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	369 87	339 84	415 00	415 00	415 00	415 00					2,423 71
Fuel.....		291 56	294 00	4 40	234 87						734 83
Provisions.....		181 09	123 00	153 00	198 00	156 15					811 24
Stores and equipment.....	35 02	204 49		7 55		6 09					253 15
Repairs.....	22 70	846 10	5 76	544 18	50 45	13 99					1,483 18
Pilotage and towage.....		10 00									10 00
Contingencies.....	3 25	24 38		4 78		3 15			256 85		292 41
Totals.....	430 84	1,951 46	543 76	1,328 51	667 85	829 25			256 85		6,008 52

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, hardpan, boulders and sand....	1,600	8,050	7,050	8,600	5,500	3,645	2,867	400					37,712

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

St. Johns.—Five cuts were made in the main channel, near Iserville wharf. One cut was also made in channel alongside canal bank. ILE AUX NOIX.—Deepening and cleaning out alongside the wharf, and deepening the channel at the mouth of the Johnston River.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909.—Continued.  
DREDGE 'SIR RICHARD,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Kingston, Frontenac Co.	June 4	Aug. 8	14 feet.	36,700		
Wolf Island Channel, Frontenac Co.	Oct. 10	Nov. 7	18 feet.	27,200	9,610 33	.13½
Garden Island	Aug. 10	Oct. 17	12 feet.	7,800		
	Nov. 9	Nov. 28				

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.	338 00	405 16	430 00	445 00	520 00	430 00	430 00	490 30	109 37	789 87	4,387 70
Fuel	163 75	166 00	166 00	270 75	306 25	268 25	232 75	182 85	187 87	160 60	1,751 20
Provisions	70 20	117 06	123 00	158 81	159 50	153 00	153 00	187 87	24 95	87 69	1,122 44
Stores and equipment.	18 00	6 00	232 57	22 59	42 90	173 52	129 60	4 75	24 95	354 08	699 57
Repairs.	48 66	59 06	39 51	39 27	6 63	66 00	27 08	27 45	12 55	25 00	642 41
Photage and towage.	23 35	15 55	3 85	18 43	6 63	66 00	27 08	27 45	12 55	25 00	91 00
Contingencies								4 45	12 55	831 30	916 01
Totals	661 96	602 83	934 93	954 85	1,035 18	1,094 57	972 43	897 67	146 87	2,249 04	9,019 33

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and mud.	11,460	14,790	8,500	13,800	11,400	11,400	11,400	11,400	11,400	11,400	11,400	11,400	71,700

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

KINGSTON.—Work done alongside Richardson's coal dock, in the harbour of refuge and in the new channel leading to the smelter.  
WOLF ISLAND CHANNEL.—In the main channel between the lighthouse and the gas buoy.  
GARDEN ISLAND.—Alongside and in front of the pier.

## SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.  
DREDGE 'ST. LOUIS,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Verdun, Jacques Cartier Co.	June 4	Aug. 1	9-11 feet.	3,702		
Yamaska, Yamaska Co.	Aug. 3	Oct. 3	7-9 feet.	11,907		
River Chénok (Berthier)	Oct. 5	Nov. 9	8-10 feet.	7,440	\$ eta.	Cts.
				6,349 20		.2773

Total expenditure, \$6,349.20. Total cubic yards removed, 23,049. Cost per cubic yard, .2773.

## DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ eta.	\$ eta.	\$ eta.	\$ eta.	\$ eta.	\$ eta.	\$ eta.	\$ eta.	\$ eta.	\$ eta.	\$ eta.
Wages	159 40	405 00	428 40	395 00	375 00	416 00	411 50	283 50	16 84	198 89	3,089 13
Fuel	22 95	13 67	174 58	133 22	199 96	159 03	220 00	184 10	7 25	7 25	953 98
Provisions		124 35	148 30	183 15	183 00	159 03	154 05	109 53		27 55	1,073 86
Stores	113 59	25 45	10 25	40 06			5 02	7 15		21 48	223 60
Repairs			201 28	54 04	362 24		2 65	59 11	25 47		704 79
Pilotage and towage						216 00		20 00			235 00
Contingencies	9 88	12 64	3 45		4 56			17 75	11 51	2 35	62 34
Totals	305 42	581 11	946 46	805 47	1,115 76	782 03	793 22	681 14	61 07	257 52	6,349 20

## QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand			2,012	1,450	7,473	3,744	6,990	1,380					23,049

## NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VERDUN. Work was done in front of the Government Wharf, and in the main channel below the wharf. Two cuts were made at the foot of the aux Heron.

YAMASKA. —Cleaning a cut in Bay La Valliere opposite the St. Jean. Two cuts were made, in the main channel at the foot of the St. Jean.

9-10 EDWARD VII., A. 1910

## PROVINCE OF MANITOBA.

## ICELANDIC RIVER.

The object of this work is the dredging of a channel from the mouth of the Icelandic river, through the shallow portion of Icelandic bay, to deep water in Lake Winnipeg.

The intention is to afford shallow draft navigation to enable boats to go up the river  $3\frac{1}{2}$  miles to Riverton, commonly known as Icelandic river.

Riverton and the adjacent district has a population of some 350 inhabitants. The principal industries are lumber cordwood and fishing.

The importance of the project would not appear to warrant an undertaking of this magnitude and the present intention is to put a channel through, giving a navigable depth of about seven feet of water at the ordinary stage of water. In periods of low water, which seldom occur, this navigable depth would be reduced to  $4\frac{1}{2}$  feet.

With the intention of making this channel as permanent as possible, it was decided to establish it south of the present one, the idea being, that the material, a stiff clay, would not be so apt to fill in from storms.

During the period from September 14 to October 24, dredge *Assiniboine* was engaged in the dredging required at this place. On the latter date, a channel averaging 45 feet in width, and 2,140 feet in length was dredged, giving a depth at low water of five feet.

On July 27, dredge *Crane* was sent to Icelandic river, in connection with the opening up of the new channel leading from the mouth of the Icelandic river to deep water in Lake Winnipeg.

The channel was located and dredge commenced operations on August 1. During the period from August 1 to October 24, on which date work was abandoned for the season, dredge *Crane* excavated 5,676 cubic yards of stiff clay in making a channel, 2,100 feet in length, 40 feet in width, giving an average depth of  $2\frac{1}{2}$  feet. This will give a navigable depth of 6 feet at the ordinary stage of water on the lake.

The expenditure of dredge *Crane* on this work was \$2,400.74, making a cost of 42.3 cents per cubic yard.

The dredging done by dredges *Assiniboine* and *Crane* was measured in place and not in scows as is the case with dredges *Winnipeg* and *Manitoba*.

## LAKE FRANCES.

Dredge *Manitoba* and equipment were put into commission on May 7, at the landing, and after the usual spring outfitting and repairs, was sent to Lake Frances outlet.

Considerable filling in had taken place between the entrance piers, and it was also thought advisable to make repairs to the north entrance pier.

Between May 13 and 24, some 1,200 cubic yards of earth and stone were removed from the entrance and used for filling in back of the north pier.

The back portion of the outer end of this pier was also damaged by an ice shove, in the early part of the season, and repairs were effected by the dredge crew while at this place. The repairs consisted in the putting in of piles, brush and ten cubic yards of stone.

The expenditure incurred on the above work of dredging and repairs to pier was \$300.

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## RED RIVER.

After outfitting, dredge *Winnipeg* was towed to the mouth of the Red river on May 12, preparatory to doing the necessary dredging in the old channel leading from the mouth of the river to deep water in the lake.

From May 13 to 26, was occupied in marking out the channel by means of buoys and guide piles driven with the pile driver scow.

It was thought to put the dredge at work through the shallowest portion of the channel, and between May 26 and July 9, some 11,200 cubic yards of sand and clay were removed in forming a channel, 80 feet wide, with a depth of 12 feet of water at the existing level of the lake. The distance covered represented the outer 1,700 lineal feet of the channel extending to deep water in the lake.

On the completion of the dredging in the old channel, dredge *Winnipeg* was placed at work on the new channel and between July 9 and September 1, excavated 19,500 cubic yards of sand and clay on the outer bar and 1,120 cubic yards in straightening out portions of the river channel.

On September 1, dredge *Winnipeg* towed up to Selkirk and repairs and alterations in steering gear of tug *Sir Hector* were effected.

The installation of machinery, converting the snag boat into a hydraulic dredge, was completed on June 8, and the dredge *Assiniboine* and equipment proceeded to the mouth of the Red river, in connection with the dredging required in the new channel.

During the period extending from June 8 to September 11, some 28,000 cubic yards of sand and clay were removed in making a channel through the bar formed at the mouth of the new channel.

The actual working period was 345 hours.

Taking into consideration the fact that this was new machinery and operated by a crew without any experience in this class of machinery, the results obtained have been satisfactory.

## ST. ANDREWS LOCK.

The dredging of the lower entrance into the St. Andrews lock was undertaken by dredge *Winnipeg* on September 7, and was continued up to the end of the season, with the exception of some dredging done on account of Messrs. Quinlan & Robertson contract for the construction of the lock and dam.

Between September 7 and November 2, some 12,200 cubic yards of earth, boulders and gravel were removed in the lower entrance, in dredging a channel, 700 feet in length, and 50 feet in width. The material was removed to rock surface at approximately elevation of 673-0.

The material was deposited in the river below the first bend, in deep water.

Between September 14 and October 10, dredge *Winnipeg*, 60½ hours filling in cofferdam for Messrs. Quinlan & Robertson. The charge for dredge *Winnipeg* and equipment was \$6.50 per hour.

On November 3, dredge *Winnipeg* went into winter quarters at the Selkirk slough.

## SWAN LAKE.

On the completion of the dredging at Lake Frances outlet, dredge *Manitoba* and equipment towed up to Swan creek, on the east side of Lake Manitoba, about 16 miles above Oak Point.

The object of this work is the dredging of a channel or waterway to the colonization road.

From Lake Manitoba up Swan creek, a distance of some 2½ miles, there is a navigable channel with a minimum depth of six feet. The remainder of the distance, 9,900 lineal feet, it was found necessary to dredge.

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The channel, when completed, will afford access to the colonization road and will also drain a large area of drowned lands.

The surrounding country is fairly well settled, and is particularly well adapted for a grazing district.

During the period from May 25, to the completion of the season's work, on November 12, dredge *Manitoba* covered a distance of 9,410 lineal feet, making an average width of 34 feet, and a navigable depth of six feet at low water. The amount of material removed amounted to 78,066 cubic yards. The material in the early part of the season consisted mostly of muskeg and earth overlaying a hard bottom of clay, gravel and boulders.

There still remains 490 lineal feet of dredging to complete the work.

The material excavated has been cast over to both sides of the channel formed. The work being sheltered from storms, no delays have occurred from this cause.

On November 16, dredge *Manitoba* and equipment went into winter quarters at Swan Creek, to be in readiness to complete the work there on the opening of navigation.

#### WINNIPEGOSIS LAKE.

During the past year, the channel at the mouth of the Mossy river has been maintained.

Dredge *Priestman* was put to work at this locality on June 1, and was laid up for the season on October 13.

The level of Lake Winnipegosis has been considerably higher this season than for some years back, and no difficulty has been experienced in crossing the bar usually formed at the mouth of the river.

It is considered that a channel of sufficient width and depth has now been made, that will maintain itself for some years, and it is not the intention of carrying on this dredging during the coming season.

Dredge *Priestman* has been laid up at Winnipegosis and most of the tools and outfit have been sent to equip the dredge at the foot of Lake Dauphin.

The small tug has been shipped to Selkirk to be used in connection with the dredging to be done at the St. Andrews lock.

During the working season, from June 1 to October 13, a total of 25,100 cubic yards of sand and clay has been removed by dredge *Priestman*.

Amount expended, \$3,109.20.

#### DREDGE VESSEL REPAIRS.

During the early part of the season the customary repairs and outfitting to dredging plant at Selkirk and Lake Manitoba were effected.

New sides and ends to the pockets of the two dump scows at Selkirk were built.

The crane of dredge *Winnipeg* was repaired and strengthened and tie rods and braces inserted in forward end of dredge.

#### NEW DREDGING PLANT.

During the months of April and May, the alterations to dredge *Assiniboine* were completed.

The dredge was then thoroughly equipped as a hydraulic dredge with 10-inch suction and 12-inch discharge.



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Seven pontoons 40 feet by 12 feet by 18 inches deep, for carrying the discharge pipes, was completed in May.

A steam pile driver scow was also constructed for the purpose of driving piles for the proposed construction work at the mouth of the Red river, also for driving mooring piles for operating dredge *Assiniboine*.

This scow is equipped with a 2,000 pound hammer working in leads, 35 feet long. The hammer is operated by a 20 h.p. hoisting engine.

During the month of March, construction was started on two new 60-yard bottom dump scows to be used in connection with dredge *Winnipeg*.

The construction of a new dredge to replace dredge *Winnipeg* was started in March.

This will be a dipper dredge of the boom type with 10-inch by 14-inch double cylinder, friction hoisting and backing machinery, operating a three-yard dipper.

The general dimensions of the hull are 80 by 33 by 8 feet deep.





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CLASSIFICATION OF DISBURSEMENTS OF the Dredges during the Year ended March 31, 1909—Continued.

DREDGE 'ASSINIBOINE.'

ITEMS.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	708 62	686 13	549 17	723 18	330 47							692 70	3,690 27
Coal.....	738 03	789 93		192 42								616 90	2,337 28
Wood.....	2 00				6 38								9 63
Provisions.....	110 59	166 73	1 25	191 00	116 32							357 17	971 79
Stores.....	74 44	24 85	3 55	33 61	12 40							151 44	360 29
Equipment.....	100 00	71 15	18 28									232 03	421 46
Repairs.....	4 43		8 69	38 98	40 16								92 26
Contingencies.....	297 80	25 00	22 01	205 44	111 91							5 28	577 44
Totals.....	1,945 91	1,763 79	632 93	1,384 63	617 64							2,055 52	8,400 42
Working expenses.....	1,941 48	1,763 79	624 24	1,345 65	577 48							2,055 52	8,308 16
Repairs, ordinary.....	4 43		8 69	38 98	40 16								92 26
Totals.....	1,945 91	1,763 79	632 93	1,384 63	617 64							2,055 52	8,400 42

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## PROVINCE OF BRITISH COLUMBIA.

## DREDGING—BRITISH COLUMBIA.

Under this head are included the maintenance and operating expenses of the hydraulic dredge *King Edward*, the snag boat *Samson*, the snag scow on the Naas river and the new *Fruhling* dredge, as well as the expenses of the dredge *Mud Lark*, while engaged at Union Bay.

*Dredge 'King Edward.'*

From April 1 to May 16, 1908, the *King Edward* was engaged at Matsqui, Fraser river, in filling around groynes built for the protection of the bank and dykes in conjunction with the provincial government. From May 20 to June 30, she was engaged at Harrison river and the Fraser river saw mills. She moved to English bay, Vancouver, on July 27. On the completion of this work, on August 18, she was hauled out on the marine railway for repairs to hull, repainting, &c. These repairs were completed on September 2, when she returned to New Westminster, and, on the 5th, resumed work on Annieville bar, where she is still at work.

Expenditure, \$40,867.63.

*Snag Boat 'Samson.'*

The operations of this boat, chargeable to the service of 'Dredging, B.C.' represent the usual work of snagging or removing snags from the channel of the Fraser river and at other points, where they interfere with the fishermen or their nets; making surveys, and attending to the buoys marking the channel at the mouth of the Fraser river. This latter service is performed for the Department of Marine and Fisheries and is becoming somewhat exacting owing to the carelessness of the captains of the different tugs towing logs up the river. They allow their tow to swing over the buoy, which is either lifted up bodily or carried off or dragged a long distance out of position. Taking soundings and replacing these buoys takes time and unfavourable weather conditions entail considerable delay. The Department of Marine and Fisheries, however, makes no demur to paying for the services of the *Samson* at the rate of \$50 per day while engaged on this work. The amount received from this source is placed to the credit of the appropriation for 'Dredging, B.C.'

Expenditure, \$15,289.55.

*New 'Fruhling' Suction Dredge.*

The above dredge was purchased in Germany for the sum of \$250,000, delivered in good order in Victoria or other seaport in British Columbia. The *Fruhling* arrived at Victoria on March 2, 127 days out, and moored at the Hudson's Bay wharf. On March 14, arrangements were made for docking the *Fruhling* in the government graving dock at Esquimalt. She was docked and the dock emptied by 2 p.m., on March 15, when a careful examination was made and an inspection of her hull was pronounced satisfactory. After her bottom had been cleaned and scraped, she received two coats of paint, one each of anti-corrosive and anti-fouling. On March 17 a trial was made of her pumps and machinery at the mouth of Victoria harbour, but the material was too hard to give any fair test of her capacity. She was ordered to New Westminster under our own officers. On March 18, on her way to New West-

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minster, she made a trial of her capacity on the sand heads at the mouth of the Fraser river, her future field of work, which lasted some hours and gave very satisfactory results. On March 18, the dredge was accepted.

The *Fruhling* continued on the sand heads, doing her work up to specifications and filling her 800 yard hoppers in from 30 to 35 minutes. The long run out to beyond the lightship to dump, some three miles and return, was against a large daily output, limiting her to five loads per day, but she has proved that she can lift her 1,500 cubic yards of sand per hour. The amount moved, however, will be regulated, as in every case of excavation, by her length of haul.

The *Fruhling* continued steadily at work until April 10, when, owing to some small informality in the papers of transfer or purchase, requiring a reference to Germany, her captain received orders from the owners to lay the dredge up pending a settlement. She came to Westminster and tied up at our wharf, where she remained until matters were adjusted, on April 29. She resumed work on May 3, operating for some three days on Annieville bar on her way down to the mouth of the river, to save moving the dredge *King Edward* from the upper groyne.

The following are the principal particulars of the *Fruhling*, a full description of which is given in the specification accompanying the contract:—

Length between perpendiculars, 187.0 feet.

Breadth, extreme, 34.6 feet.

Moulded depth, 14.9 feet.

Dredging depth, 45 feet.

Load capacity, 1,000 tons.

Speed, loaded, 9 knots.

Speed, light, 12 knots.

Indicated horse power, 1,100 tons.

She is a flush-decked, steel, twin screw steamer, with hoppers forward which can be emptied either through bottom doors controlled by hydraulic engines or by pump suction discharging contents through deck pipe into shore connection for reclamation work. There are two boilers of the usual marine return tube type providing steam for the four sets of main engines, each of 250 I.H.P.

There is no better testimonial as to the sea-going properties of the dredge *Fruhling* and the class of her machinery than the fact that, after an unusually rough trip, both in the Indian ocean and the Pacific, she arrived here after a 17,000 mile voyage a little weather-beaten but apparently in all essentials fit to make the return trip after cleaning and repairing her hull.

The machinery is a marvel of convenience and strength and controls the movements of all the workable portions of the dredge. She works on the sand heads in weather such as none of our other dredges could face, which has always proved such a serious draw-back to all attempts to get satisfactory work in that exposed locality.

Expenditure, \$1,939.68.

#### UNION BAY.

The dredge *Mud Lark* was detailed for work in the interests of the coal industry. She operated there from the 20th to the end of June in clearing away the refuse that unavoidably accumulates in front of the wharfs, her expenses, while working at this point, being charged to 'Dredging, B.C.'

Expenditure, \$1,443.95.

#### DREDGE REPAIRS, B.C.

This service covers the expenditure in repairs to the different dredges and boats in the government service in British Columbia, that is, such repairs as cannot be done by our own crews and machinists. As will be seen, in the case of the dredges *Mud*

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*Lark* and *King Edward*, but in the case of the *Mud Lark*, a considerable portion of the expense is represented by repairs to hopper and coal scows from time to time, as occasion required.

*Mud Lark.*

General repairs were made from time to time to this dredge. Two coal scows were hauled out and new bottom, deck planking and stanchions put in. One of these scows has since been handed over to the dredge *Ajax*. The tender *Princess* and two hopper scows also underwent repairs as occasion required.

Expenditure, \$13,081.66.

*King Edward.*

General repairs, incidental to ordinary wear and tear, were made to machinery, pipes and pontoons. The dredge itself was hauled out on the marine railway at Vancouver. The planking of her hull was far gone in decay and had to be replaced; new spud boxes were built, as the old ones were leaking badly and beyond repair; a complete new set of rubber couplings, for discharge pipes, some fifty in number, and a length of suction pipe, as well as about 1,000 feet of discharge pipe, were purchased.

Expenditure, \$13,859.54.

*Snag Boat 'Samson.'*

Only a few minor repairs were required.

Expenditure, \$280.63.

*Tug 'Petrel.'*

This boat was hauled out on the ways and received her usual annual over-hauling, painting, &c.

Expenditure, \$710.95.

*'Ajax.'*

Considerable expense was incurred with the new hopper scows attached to this dredge in getting the doors to work properly. They had to be remodelled and refitted and are now working all right. We also have had trouble in the matter of the 2½-inch hoisting cable. The life of those cables is surprisingly short, varying from six weeks to two months, ordinary wear. They are the best obtainable, 230 feet long, 2½ inches diameter, 6 strands of 37 wires plough steel, at \$1.62, delivered in Victoria, or \$372.60 for each renewal. I find on inquiry that our experience is no exception and that the dredges in Montreal harbour have the same experience. It obliges us, however, to keep a standing order in force to avoid being laid up.

Expenditure, \$3,235.11.

## NEW DREDGING PLANT.

The expenditure under this head has been entirely in connection with the dredge *Ajax* in equipment, repairs and alterations to some parts of the machinery. The crane, although according to drawing, developed weakness at all the plate joints and butt plates had to be rivetted on. The stern spud was very dangerous and had to be railed around and part of the opening covered to avoid accidents. A new arrangement was also necessary to prevent the cable operating this spud from jumping the sheave. The dredge is now in good working order and apart from the renewal of the cable, mentioned under the head of 'Dredge Repairs,' should not be heavy on dredge repairs.

Expenditure, \$9,493.70.

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## DREDGING PLANT UNDER THE CONTROL OF THE DEPARTMENT OF PUBLIC WORKS, 1908.

### MARITIME PROVINCES.

#### *'St. Lawrence' self-propelling elevator dredge.*

Length over all, 170.0 feet; beam, 30.0 feet; least working depth, 8.5 feet;  
greatest working depth, 28.0 feet.

Capacity of hopper, 350 cubic yards.

Daily dredging in hard material, 350 to 700 cubic yards.

" " ordinary earth, 750 to 1,000 cubic yards.

" " soft earth, 1,050 to 1,400 cubic yards.

#### *'Canada' self-propelling elevator dredge.*

Length over all, 130.0 feet; beam, 20.0 feet; least working depth, 7.0 feet;  
greatest working depth, 16.0 feet.

Capacity of hopper, 90 cubic yards.

Daily dredging in hard bottom, 180 to 270 cubic yards.

" " ordinary material, 180 to 360 cubic yards.

" " soft material, 360 to 450 cubic yards.

#### *'Prince Edward' spoon dredge.*

Length, 80 feet; width, 28 feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 700 cubic yards.

Number of accompanying dump scows or barges, 3.

Capacity of bucket or spoon,  $1\frac{1}{2}$  cubic yards.

#### *'Geo. McKenzie' spoon or dipper dredge (wooden hull).*

Length, 90 feet; width, 28 feet; greatest working depth, 22 feet.

Daily rate of dredging in hard material, 350 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 600 cubic yards.

Number of dump scows or barges used, 3.

#### *'Cape Breton' boom and dipper dredge (steel hull).*

Length, 91 feet; beam, 36 feet; greatest depth, 34 feet.

Daily rate of dredging in hard material, 1,000 cubic yards.

" " ordinary bottom, 1,500 cubic yards.

" " soft bottom, 2,000 cubic yards.

#### *The spoon 'New Dominion' (wooden hull).*

Length over all, 90 feet; width, 28 feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 450 cubic yards.

" " soft material, 600 to 700 cubic yards.



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*The clam shell dredge 'New Brunswick' (wooden hull).*

Length over all, 90 feet; width, 25 feet; greatest working depth, 17 feet.

Daily rate of dredging in hard material, 180 cubic yards.

" " ordinary material, 300 cubic yards.

" " soft material, 650 cubic yards.

*The 'W. S. Fielding' combined elevator and hydraulic hopper dredge.*

Length, 250 feet; beam, 42 feet; depth, 18 feet; working depth, 60 feet.

Capacity of hoppers, 1,000 cubic yards.

Daily output of buckets, 2,600 yards.

*The spoon dredge 'Montague' (steel hull).*

Length over all, 90 feet; width, 37 feet 8 inches; draught, 5 feet 6 inches; greatest working depth, 28 feet.

Daily rate of dredging, 10 hours, 1,000 cubic yards.

Number of barges used (each 72 feet long 19 feet 8 inches wide, depth 7 feet), 2.

*The sand pump dredge 'Northumberland' (steel hull).*

Length, 130 feet; agitator, 65 feet; width, 52 feet; draught, 7 feet; working depth, 40 feet.

Daily working capacity, 4,000 cubic yards in ten hours.

*Tug 'Helena.'*

Length, 111 feet; beam, 23 feet; hold, 13 feet; horse-power, 25.

*Tug 'Cricket.'*

Length, 36.5 feet; beam, 7.3 feet; draught, 3.10 feet; horse-power, 4.

*Tug 'Rona.'*

Length, 85.0 feet; beam, 19.3 feet; draught, 8.0 feet; horse-power, 25.

One pile driver, with boiler and engine mounted on scow.

One stone lifter with large grips (no boiler).

There are two (2) steel hopper barges of 200 cubic yards capacity under contract for the dredges in the maritime provinces.

## QUEBEC AND ONTARIO.

*'Queen' dipper dredge.*

Length, 65.3 feet; beam, 25 feet.

Greatest working depth, 17.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 400 cubic yards.

" " soft material, 600 cubic yards.

(Dredge attended by tug *Sensation* and two dump scows of 30 cubic yards capacity.)

*'Nipissing' dipper dredge.*

Length, 70.7 feet; beam, 25.0 feet; greatest working depth, 20.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " soft material, 800 cubic yards.

" " ordinary material, 500 cubic yards.

Capacity of bucket, 3 cubic yards.

(Attended by tug *Delisle*, 2 dump scows and 1 coal tender.)

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*'Ontario' dipper dredge.*

Length, 75.0 feet; beam, 25.0 feet; greatest working depth, 22.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

(Attended by tug *Sir John* and 2 dump scows.)*'Challenge' dipper dredge.*

Length, 70.5 feet; beam, 25.0 feet; greatest working depth, 21.10 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

(Attended by tug *Trudeau* and 2 dump scows.)*'St. Louis' spoon dredge.*

Length, 50.0 feet; beam, 14.0 feet; greatest working depth, 12.0 feet.

Daily rate of dredging in hard material, 50 cubic yards.

" " soft material, 300 cubic yards.

(Attended by tug *Daisy* and 2 dump scows.) Used only in light work.*Twin stone lifter (ontamaran.)*

Length of each wooden hull, 42.0 feet; beam of each wooden hull, 8.5 feet; distance between hulls, 7.0 feet.

*'Reserve' wooden scow.*

Length, 59.0 feet; beam, 17.0 feet; capacity, 100 tons.

*'Sir Richard' dredge.*

Length, 80.0 feet; beam, 28.0 feet; greatest working depth, 22.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

Capacity of bucket, 3 cubic yards.

(Dredge attended by tug *St. Paul*.)*Dredge 'Industry.'*

Length, 125 feet; beam, 43 feet; greatest working depth, 35 feet.

Daily rate of dredging in soft material, 3,000 cubic yards.

" " ordinary material, 2,000 cubic yards.

" " hard material, 1,500 cubic yards.

*Dredge 'Quebec.'*

Length, 108 feet; beam, 36.8 feet; greatest working depth, 40 feet.

Daily rate of dredging in soft material, 4,000 cubic yards.

" " ordinary material, 2,700 cubic yards.

" " hard material, 1,800 cubic yards.

*Dredge 'No. 3' (Building and almost completed).*

Length, 60 feet; beam, 22 feet; greatest working depth, 14 feet.

Daily rate of dredging, ordinary material, 400 cubic yards.

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*'Richelieu' dredge.*

Length, 70.0 feet; beam, 22.0 feet.

Daily rate of dredging in ordinary material, 400 cubic yards.

(Attended by tug *Ottawa* and 2 dump scows.)

*'Steam stone lifter' centre well.*

Length, 25.0 feet; beam, 23.0 feet; depth, 4.0 feet.

(Attended by 130-foot scow as coal tender.)

*'St. Maurice' dredge.*

(A small dredge used on the River St. Maurice only.)

Tug *Annette* and stone lifter.

*'Lake St. John dredge.'*

Length over all, 75 feet; width, 25 feet; draft,  $2\frac{1}{2}$  feet; greatest working depth, 18 feet.

Tug *Marie-Louise* on Lake St. John.

*'International' dipper dredge.*

Length, 109.6 feet; beam, 41.0 feet; greatest working depth, 60.0 feet.

Daily dredging in hard material, 1,000 cubic yards.

" " ordinary material, 1,500 cubic yards.

" " soft material, 2,000 cubic yards.

*'Progress' dredge.*

Length, 90.10 feet; beam, 39.2 feet; greatest working depth, 30.0 feet.

Daily rate of dredging in hard material, 500 cubic yards.

" " ordinary material, 1,000 cubic yards.

" " soft material, 1,500 cubic yards.

(Dredge attended by tug *Monitor* and 3 scows.)

*'Mattawa' dipper dredge.*

Length, 75.0 feet; beam, 25.0 feet; greatest working depth, 25.0 feet.

Daily rate of dredging in ordinary material, 1,000 cubic yards.

(Dredge attended by tug *Catherine* and 2 dump scows.)

*'Dredge No. 1' on River St. Louis Feeder.*

Length, 55.0 feet; beam, 20.0 feet; greatest working depth, 12.0 feet.

Daily rate of dredging, 300 to 400 yards.

*'Dredge No. 2' dipper dredge.*

Length, 60.0 feet; beam, 22.0 feet; greatest working depth, 14.0 feet.

Daily rate of dredging, ordinary material, 400 cubic yards.

*'Dredge No. 6' dipper dredge.*

Length, 97 feet; beam, 36.4 feet; greatest working depth, 35 feet.

Daily rate of dredging, ordinary material, 1,500 cubic yards.

(Tugs *Speedy*, *Montmorency*, *Blanche*. Schooner *Rutherford*.)

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## MANITOBA.

## 'Winnipeg,' dipper dredge.

Length, 71.0 feet; beam, 25.0 feet; greatest working depth, 20.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

## 'Manitoba' dipper dredge.

Length, 60 feet; beam, 24 feet.

(Dredge attended by tug *Victoria* and two dump scows.)

## 'Priestman' barge and clam-shell dredge.

A small dredge, old and not much good.

## 'Crane' orange peel dredge.

A scow fitted up as a dredge.

## 'Assiniboine' dredge.

Length, 50 feet; width, 30 feet, and depth 4.5 feet.

Orange peel bucket, 1½ yard capacity.

## SASKATCHEWAN.

## 'Last Mountain Lake Dredge' (Dipper dredge.)

Length, 60 feet; beam, 22 feet; greatest working depth, 14 feet.

Daily output, ordinary material, 400 cubic yards.

## BRITISH COLUMBIA.

## 'King Edward' propelling hydraulic dredge.

Length, 125 feet; beam, 32 feet; greatest working depth, 40 feet.

## 'Mud Lark' dipper dredge.

Length, 90 feet; beam, 30 feet; greatest working depth, 40 feet.

Daily rate of dredging in hard material, 300 to 400 cubic yards.

" " ordinary material, 500 to 600 cubic yards.

" " soft material, 800 cubic yards.

(Dredge attended by tug *Princess* and three dump scows.)

## 'Nakusp' self-propelling dipper dredge.

Length, 80 feet; beam, 25 feet; boom, 50 feet; dipper capacity ¾ foot.

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*'Fruhling' hydraulic hopper and suction dredge (steel hull).*

Length, 187.0 feet; breadth, 34.6 feet; moulded depth, 14.9 feet; draft, loaded, 13.1 feet; dredging depth, 45.0 feet.

Capacity of hoppers, 785 cubic yards.

Load capacity, 1,000 tons.

Indicated horse-power, 1,000.

Speed, loaded, 9 knots.

Speed, light, 12 knots.

Rate of dredging, 1,500 cubic yards per hour.

*Dredge 'Ajax.'*

Length, 110 feet; beam, 38 feet; least working depth, 14 feet; greatest working depth, 40 feet.

Daily output from 800 to 1,400 cubic yards, according to nature of material.

*Dredge 'Pelican.'*

Length, 58 feet; beam, 24 feet; draws about 1 foot 6 inches water.

Orange peel bucket, will work in any depth of water.

Daily output, about 200 cubic yards.

*Snag boat 'Cygnet.'*

Length, 100 feet; beam, 27 feet; draws about 3 feet 2 inches water.

*Snag scow on Naas River.*

Length, 60 feet; beam, 20 feet 6 inches; depth, 4 feet 6 inches; draws about 2 feet of water.

*Tug-boat 'Muskrat II.'*

Length, 80 feet; beam, 20 feet.

*'Samson' snag boat.*

Length, 115 feet; beam, 30 feet.

*'Petrel' and tender.*

Length, 85 feet; beam, 17 feet; horse-power, 280.

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### DRY DOCKS.

The Dominion government owns and operates three dry docks, viz.: the Lorne dry dock, at Lévis, province of Quebec; the Kingston dry dock, at Kingston, province of Ontario; and the Esquimalt dry dock, at Esquimalt, near the city of Victoria, in British Columbia.

#### LEVIS DRY DOCK.

During the last fiscal year, this service was kept in an efficient manner the staff was employed in docking and undocking the twenty-six vessels which occupied the dock. The total expenditure of \$20,891.10 was incurred in connection with the usual repairs required for the proper maintenance of the property.

Total amount of revenue, \$29,027.96.

#### KINGSTON DRY DOCK.

During the past fiscal year, the dock has been occupied 240½ days by 53 vessels, representing a total tonnage of 24,425. The dues collected amounted to \$10,593.84, while the expenditure of \$8,324.11 was incurred in connection with staff wages, maintenance and repairs to caisson and derrick.

#### ESQUIMALT DRY DOCK.

During the year ending March 31, 1909, the dock was occupied 158 days, twenty-two ships having been docked, with an average gross tonnage of 63,829 tons; the revenue collected was \$20,583.36.

The sum of \$13,671.37 was expended in staff wages, in repairing the drains and the sheds, in cleaning and painting the caissons.

#### RIVIERE DU LIÈVRE LOCK.

This lock is situated at Poupore, on the Rivière du Lièvre, 12 miles above Buckingham, in the county of Labelle. It is built to overcome the Little Rapids at that place and to drown the Long rapids above, thus giving slack water navigation as far as High falls, a total distance of 24 miles from Buckingham.

At its session of 1908, parliament appropriated \$3,200 towards repairs and improvements to this work.

The extraordinary spring freshet in 1908 scoured a channel around the west abutment of the dam. In May, a cut-off gravity dam was built to protect the bank at this point. The dam is sheeted and puddled. The backfilling of riprap was placed, from September 1 to 12th, and from January 18 to February 4; the lock gates were repainted; the sheeting of the dam was repaired and wrought iron plates, to protect the timber slide, were procured; the upper boom was moved upstream; a new training boom was built, and two boom piers were constructed.

Total expenditure during the fiscal year 1908-9 amounted to \$5,105.56.

#### YAMASKA LOCK.

In 1886, a lock and dam was constructed at Ile Cardin, in the Yamaska river, 1½ miles below the village of St. Michel d'Yamaska. The lock gives a lift of 5½ feet.

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The following are the commercial statistics of the navigable section of the river at the outlet, registered at the lock during the season of 1908:—

	Tons.
36 steamboats, general merchandise.. . . . .	1,672
23 sailing boats, general merchandise.. . . . .	433
21 lighters, general merchandise.. . . . .	733
95 tugs.. . . . .	360
Total.. . . . .	3,238

During the low water season, the main dam had been repaired as also the eastern pier of the lock, by renewing the covering and sheathing, and placing some stone rip-rap.

Total expenditure during the fiscal year 1908-9:—

Staff and maintenance.. . . . .	\$1,596 99
Repairs.. . . . .	1,117 81

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## SLIDES AND BOOMS.

The Dominion government owns and operates slides and boom works, built to facilitate the passage of square timber, round logs, flatted and dimension timber, &c., on the River Ottawa and tributaries; on the St. Maurice river; the Saguenay river, and at Fenelon Falls and Burleigh Falls on the Trent river.

In the subjoined reports, the superintending engineers of the river works, Messrs. G. P. Brophy, F. X. Lefebvre, and J. C. Taché, give particulars relative to the construction, improvements and repairs carried out under their supervision on government slides, booms, piers, dams, streams, buildings, &c., during the fiscal year, the expenditure incurred for staff, maintenance, improvements, &c., the quantities of the various descriptions of timber that pass through their works, and other information of general interest and utility to lumbermen and the public at large.

## REPORT ON THE OTTAWA RIVER WORKS.

(By G. P. Brophy, Superintending Engineer.)

OTTAWA, May 1, 1909.

The Chief Engineer,  
Department of Public Works,  
Ottawa.

SIR,—As requested by you, in your circular letter of March 25 last, I have the honour to submit the following report on the works under my charge, for the fiscal year ended March 31 last.

## ORDINARY REPAIRS—STATIONS ON OTTAWA RIVER—MAIN STREAM.

*Carillon Station.*—The only expenditure at this place was for an inspection of the slide works, and the preparation of an inventory of the tools, booms, &c.

*North Chaudiere Station.*—At the entrance to the upper slide, new timbers were placed in the guide booms, and considerable of the covering plank was renewed. Portions of the floor of this slide were laid with new plank, after the damaged material had been removed and new false sills had been inserted. The iron straps on the bottom were straightened and secured, while the iron sheathing and straps on the stop-logs were repaired. Five timbers, protected by iron bars, were laid in the bottom of lower slide, at its outlet. The angle plates on the corners of entrance piers of this slide were taken off, repaired and re-set; two special stop-logs were made for the bulkhead, three stop-logs were also made for the waste gate and the piers were raised two courses and filled with stone.

*South Chaudiere Station.*—At this station, broken booms were repaired; the fastenings of the aprons and guide booms were adjusted, and additional mooring chains were provided. The top of side pier, on north side, near outlet, which had become displaced by excessive high water in the spring of 1908, was replaced. Loose planks in



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the bottom of slides were secured; the boats were repaired and painted; the shed for general storage was extended some 16 feet in length by 25 feet in depth, and the roofs of the other buildings were repaired. Snow was removed from the roofs of the different buildings, and, in order to protect the booms, ice had to be cut from around them.

*Chats Station.*—Two cross-sills and two longitudinal timbers were placed in the upper apron, after the water had been shut out of the slide. The flooring of the slide was also overhauled, and new material was laid where the old had become too thin for further service.

*Portage-du-Fort Station.*—The expenditure here was for materials for repairs to the bottom of slide, viz.: 4-inch plank and a timber for a cross-sill; the work being performed by the slide master and his assistant.

*Mountain Station.*—The outlay at this station was small and was incurred in splicing the guide booms and placing connecting chains in them.

*Calumet Station.*—The roof of the station house was shingled, the guide booms were spliced, and planking in the bottom of second or long slide was repaired.

*Joachim Station.*—The expenditure here was for an examination of the condition of the slides, booms and piers and making a list of the property on hand such as ropes, chains, bolts, tools, &c.

## TRIBUTARIES OF THE OTTAWA RIVER.

*Gatineau River.*—The top of a pier supporting the main boom, opposite the station house, was rebuilt. The pier is 23 feet by 12 feet, and the portion renewed was 6 feet in height. An oak snubbing post was set in the pier and iron bars were placed on the side stringers, to prevent the mooring chains from cutting into the timbers.

The highway bridge, across the new canal, was rebuilt. The structure was in a very dilapidated condition, the timbers of the abutments having bulged out of place so much as to render the bridge dangerous for traffic. The clear span, 47 feet in length, is carried by a queen truss of 10-inch by 13-inch pine timbers. The abutments, which are also of pine, rest upon piles driven for the purpose, and are 18 feet in width and 20 feet in height, and extend into the banks on either side some 40 feet. The floor is of 3-inch hemlock, and, with the approaches, is 140 feet in length, with 14 feet of clear roadway. On the upper side of both abutments, are wings filled with stone and carried up sufficiently high to thoroughly protect the foundations of the timber work. Suitable guard rails were erected on both sides, and, at the northern end, the flooring was extended in width to ease the approach, as there is a square turn in the roadway at this end of the bridge.

Precautions were taken, as usual, during the spring months, to free the booms when the ice was moving off the river.

*Madawaska River.*—At the mouth of the river, two of the piers supporting the retaining boom were sheared off at the water edge by ice shoves, and had to be rebuilt. One of these piers is 18 feet by 22 feet and the other 16 feet by 17 feet, both being 12 feet high above the water line. They were filled to the top with stone which had to be quarried for the purpose, and the face of each pier is covered with plank forming a batter, to protect the structures as much as possible from damage from ice and logs.

At Arnprior station, the outlay was for rivet links and rock bolt, as well as for the usual repairs to the tools and boats.

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At Flat rapids, extensive repairs were made to the flat dam at the south side of the river. This work is an ordinary flat dam sheeted on the face with planking. A section, 275 feet in length and  $7\frac{1}{2}$  feet in height, was built in the new. The front of another section, 182 feet long, was also rebuilt. The sheeting on the face of the remaining portions was patched at many places, and a course of timber, 100 feet long, was placed on the crest. The top timbers of the pier, at east end of dam, were replaced, and 18 cubic yards of stone filling were added to the pier.

At Duck rapids, some of the sheeting on the flat dam was renewed where it had been torn off.

At Chain rapids, stone was removed from the cribwork under the slide, the timbers which were displaced were reset, and after a false bottom had been laid, the ballast was again put in. The ends of the cross-sills were planked and loaded with stone to act as an anchor. Five hundred feet b.m. of 3-inch maple plank were laid in the east side of slide, near the entrance. Several braces were put in the slide, the gains of the stop-logs were patched and the planking on the bulkhead was repaired.

*Coulouge River.*—At the retaining boom, near Coulouge village, one of the piers was rebuilt from low water mark. The pier is 32 feet by 27 feet at water line, 18 feet by 17 feet at top and 12 feet high.

At High Falls station, a section of the main governing dam, 60 feet in length, was repaired. Two rounds of timber were built and filled with stone. The face was covered with 3-inch birch, 12 feet long. Five new snubbing posts were placed in the piers supporting the guide boom, and the mooring chains were fastened to ties in the bodies of the piers. Five posts of 10 by 10-inch timber, 13 feet long, were set under the slide superstructure. Fifteen cross-sills, thirty posts, fifty braces and a longitudinal stringer were placed in the slide. Sheeting in sides and bottom of slide was patched and iron bars were laid in bottom to protect the flooring. The foot boards were repaired, and seven stop-logs were made for the bulkhead. The shelter house at 'watch point' was covered with 1-inch boards, while the roof of the station house was shingled.

*Black River.*—At High Falls station, seven posts and forty-three braces were renewed in the slide, while the sheeting in sides, at many places, was patched. At certain points, where the sides are of solid timber and had become gouged out, new material was inserted and the surface exposed to wear was covered with iron. Three bents, 10 feet high, were placed under the slide at a point about 200 feet below the entrance, to take the place of the old one which was damaged. At this place, two extra chains of  $\frac{3}{4}$ -inch iron were also set to steady the superstructure. Timbers were fastened to the timbers to stiffen them, and eye bolts of  $1\frac{1}{4}$ -inch iron, 14 feet long, were placed across the slide to which were attached the chains. The chains are some 50 feet long and are anchored to ring bolts set in the solid rock. At the entrance to the slide, a new guide boom was built on the west side. The part immediately above the slide is double and is five sticks in length, held together by 1-inch screw bolts; the remainder, seven sticks long, is single, the different members being connected by skein chains of  $\frac{3}{4}$ -inch iron.

At the retaining boom, a post was set in the pier on shore at head, and the boom was lengthened by four sticks connected by suitable chains.

*Petewawa River.*—At Second Chute station, a snubbing pier was built, on the south side of the river. It is 14 feet square, four courses high and filled with stone. A break in the main governing dam was repaired. The necessary ties and stringers were placed in the dam, and the face was covered with sheeting, 6 inches thick. Damaged sheeting at other places on the dam was renewed. Fifteen pieces of 10 by 10-inch birch, 12 feet long, were laid in the bottom of the slide at its outlet.

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At Third Chute station, the glance pier on south side, above Canadian Pacific Railway Company's bridge, where a 'washout' occurred, was repaired. New timbers were substituted for those carried away and the proper stone filling was placed in the pier. Twelve pieces of timber were set in the guide booms, and the top of a pier, at upper end of guide boom, was repaired. The sheeting on the different guide booms were also patched where found necessary.

At Crooked Chute Station, the south side of the slide, 155 feet long, was rebuilt with 11-inch timber. The floor of slide was patched and iron bars were placed on both of the entrance piers. The pier at foot of the slide on south side, was rebuilt, as was also the one at entrance, on the same side. The former is 15 feet long, 8 feet wide, and 5 feet high, and the latter 25 feet long, 8 feet wide and 4 feet high. A timber was set along the crest of the governing dam, as it had sagged somewhat and allowed too much water to escape, to the detriment of the proper working of the slide.

At McDonald's station, iron bars were placed on the sides of entrance piers, to protect timbers from being damaged by abrasion by logs and timber.

*Dumoine River.*—The roof of the station house at High Falls was shingled, and the bottom of slide at outlet was repaired where the timbers had been damaged by passing logs.

## CONSTRUCTION.

*Black River.*—Just below the outlet of High Falls slide, the east bank of Black river had become much worn by the action of the water, which made the bed of the river unusually wide and consequently very shallow at this particular place, so that great difficulty was experienced in passing logs and timber over the shoals; it became necessary to adopt means to conserve the water and prevent it from spreading so much, that the output of the slide might be passed expeditiously. A glance pier was built parallel to the west bank of the river, 237 feet in length, 12 to 14 feet in width at base, 8 feet at top and  $7\frac{1}{2}$  feet in height. The pier narrows the channel by more than one-half, and no further trouble may be expected at this place.

## GENERALLY.

In the spring of 1908, the water in the Ottawa river and tributaries reached its maximum height about May 16, being rather above the average height of other years. It kept up well during the months of June and July, but after the 1st of August it fell rapidly, and, by the end of October, it had receded to a pitch much lower than for many years before. Most of the drives on the tributaries had reached the main river before the water fell very much, so that little difficulty was encountered in that respect.

STATEMENT of the number of pieces of square timber, saw-logs, &c., that passed through the government slides and works on the Ottawa river and its tributaries, during the fiscal year ended March 31, 1909.

	Pieces.
Square timber . . . . .	3,296
Saw-logs. . . . .	4,026,487
Boom and dimension timber. . . . .	61,529
Cedars. . . . .	89,932
Railroad ties. . . . .	558,379
Fence posts . . . . .	74,435
	<hr/>
	4,814,058

Also 60,190  $\frac{1}{2}$  cords of pulpwood.

The revenue accrued on the above was \$40,390.99.

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## STATEMENT showing Expenditure for Repairs and Construction on Ottawa River Works for Fiscal Year ended March 31, 1909.

Names of Stations.	Province.	Electoral District.	EXPENDITURE.		EXPENDITURE.		EXPENDITURE.	
			\$	cts.	\$	cts.	\$	cts.
Carillon Station..... North Chaudiere Station.. South " Chate Station..... Portage du Fort Station.. Mountain Station..... Calumet Station..... Joachim Station.....	{ Ontario..... Quebec..... "..... "..... Quebec..... "..... ".....	{ County of Prescott..... District of Wright..... City of Ottawa..... County of Carleton..... North Riding County of Renfrew..... County of Pontiac..... "..... ".....	714	81	43	10	43	10
			508	00	188	77	903	68
			104	50	445	45	953	45
			43	92	31	13	135	63
			15	00	.....	.....	43	92
			92	19	.....	.....	15	00
			.....	.....	.....	.....	92	19
			.....	.....	150	80	150	80
			1,478	42	859	25	2,337	67
			250	41	2,398	11	2,657	62
Gatineau River..... Madawaska River..... Concoue River..... Black River..... Petawawa River..... Duncans River.....	{ Quebec..... Ontario..... Quebec..... "..... Ontario..... Quebec.....	{ District of Wright..... South Riding Co. Renfrew..... County of Pontiac..... "..... North Renfrew and Nipissing..... County of Pontiac.....	822	76	972	98	1,795	74
			48	00	791	83	839	80
			765	00	510	43	1,276	43
			1,055	45	574	83	1,629	79
			100	50	74	14	174	64
			3,052	13	5,321	82	8,373	95
Construction— High Falls, Black River.....	".....	County of Pontiac.....	.....	.....	340	55	10,711	62
			2,021	52	.....	.....	2,302	07
			.....	.....	.....	.....	13,073	69

OTTAWA, May 1, 1909.

JOS. KENT,  
*Accountant.*

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## REPORT ON ST. MAURICE RIVER WORKS.

(By F. X. Lefebvre, Superintending Engineer.)

EUGENE D. LAFLEUR, Esq.,

Chief Engineer, Department of Public Works,  
Ottawa.

SIR,—I have the honour to submit the following report on the works done under my supervision, during the fiscal year ending March 31, 1909.

Last spring, the freshets did much damage to our booms, especially at Petites Piles, where they caused the loss of several booms of from three to five feet in width by from 25 to 120 feet in length, and where eight large booms 100 feet long and six feet wide, completed only a few months before, went right through over the Grand Mère falls. Out of the eight booms above mentioned, seven were caught at Pointe a Bernard, hardly injured, but we had to take them apart in order to ship them by rail; three of them to Grandes Piles and three others to Grand-Mère, leaving one to be used at Pointe a Bernard.

*Petites Piles.*—A length of about 2,300 feet of spruce booms, three feet in width by 12 inches thick, was built, a house for the use of the boom-master at Petites Piles was also constructed; repairs were made to the booms that were damaged during the freshets and that were in good shape enough to be repaired; coupling and guide chains were also bought.

*Grand-Mère.*—The three booms which had been transported here from Shawinigan were rebuilt and towed to Petites Piles.

*Rapids des Heltes.*—On February 22 last, repairs were commenced on the dam situated on the west side of the St. Maurice river, which dam was partly demolished last spring by the freshet; a scow measuring 45 feet long by 10 feet wide by two feet deep, was also built, to be used while stretching the booms and while taking them away for the winter.

*Pointe a Bernard.*—A dam about 150 feet long by 13 feet wide, was erected at the head of Melville island and repairs were made to the Shawinigan slide.

*Lower Shawinigan Bay.*—Two piers were rebuilt from low water line up, one at the foot of the Shawinigan falls and the other near the Pointe a Chevalier.

The glance boom below the Pigeon island was also planked with three-inch pine deals.

The total expenditure during the last fiscal year amounted to \$28,062.94.

## REPORT ON THE SAGUENAY RIVER BOOMS.

(By J. C. Taché, Superintending Engineer.)

Saguenay booms are on the Saguenay river, about six miles above Chicoutimi.

The work done during the fiscal year 1908-9 was the repairing of the boom which had been damaged last spring on account of the extraordinary high water; 'La Cie de Pulpe de Chicoutimi's' booms, which were stretched inside the government booms, gave way, and their chains and anchors got mixed up with the government booms; this was the cause of the damage.

Some 1,251 feet of booms were constructed this spring, in spruce, and anchors and chains were bought.

Total amount of expenditure for maintenance, staff and repairs. \$2,402.84.

## BRIDGES AND ROADS.

It may be stated that, in the older provinces of the Dominion, the federal government has confined itself, as a rule, to take under its exclusive control and make provisions towards the construction and maintenance of important interprovincial road bridges and bridges required across waterways.

In the sparsely settled districts of the Northwest Territories, the government of Canada has undertaken to provide for the erection and maintenance of ordinary road bridges over large streams; bridges that are urgently needed to afford uninterrupted communication through trails and highways of national importance, which neither the municipalities to be more immediately benefited by the structures, nor the territorial authorities most directly concerned, could be expected to erect and maintain at their sole expense.

During the last fiscal year, works have been executed on the following:—

## ONTARIO AND QUEBEC.

BRIDGES AT OTTAWA, AND ROADWAY AND BRIDGE APPROACHES BETWEEN OTTAWA AND HULL.  
—ORDINARY REPAIRS.

*Chaudiere Slide Bridge.*—The foundations for the gratings, at the south end of this bridge, were renewed with concrete. The guard-rails and sides of the bridge were painted. At the Middle street approach, the sandstone pavement was taken up and relaid, as the foundations had settled somewhat. A concrete pier was built under the abutment at this approach, where the base was undermined, and the top of the abutment was pointed with cement mortar.

*Union Bridge.*—The planking on this bridge was patched, and the iron truss was covered with 'Esco steel coating.'

*Hull Slide Bridge.*—The expenditure upon this bridge was for the removal of debris from the roadway.

*Roadway and Bridge Approaches Between Ottawa and Hull.*—The pavement along the guard-rail of the Ottawa Electric Railway was levelled, and new openings were made throughout the whole length of the guard for drainage. In places where the pavement had settled, on account of the foundations having been washed out, the voids were filled with stone. The roadway where it crosses the stone dam, was raised five inches, for a distance of over 100 feet, to improve the grade at this place. The sidewalks along the thoroughfare were patched, and the water holes were kept clean.

The roadways of the bridges and causeway leading to Hull were all cleaned quite frequently, through the summer season, and during the winter months, surplus ice and snow were removed from both the roadways and sidewalks, and sand was deposited upon the latter, when in a slippery condition.

## EXTRAORDINARY REPAIRS.

*Devil's Hole, Hull Causeway.*—At this place, the side of the roadway, which was supported by a rough wooden cribwork built many years ago, gave way, and threatened the destruction of a portion of the roadway. A cofferdam was built to relieve the

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strain on the causeway, and a concrete wall was built along the face, the rear being filled with stone. The retaining wall is 60 feet in length, 14 feet in height and is surmounted by a concrete curb into which are embedded the iron standards which carry the pipe-guard railing. Suitable openings were made in the base of the curb to properly drain the roadbed.

*Pond Creek Bridge, Gatineau.*—Ponk creek is the outlet of Leamy's lake, and this bridge spans that stream, being on the main highway leading from the city of Hull to the village of Gatineau Point. The bottom chord on the west side of the bridge became broken, and allowed the floor to sag about 14 inches. The structure was in a very dangerous condition. The floor beams were drawn up by temporary screw bolts and longitudinal timbers, and thus held in position until the more permanent repairs were executed. Two diagonal rods of 1½-inch iron were placed in each truss, oak bevel pieces giving the proper angle beneath the chord. Angle plates were also placed on the four corners of the trusses to better distribute the stress. Vertical rods of 1-inch iron and extra pieces of pine were placed in the trusses to stiffen them. The perpendicular timbers were spliced with new timbers, reinforced with iron straps.

*Portage du Fort Interprovincial Bridge.*—This bridge spans the Ottawa river at the village of Portage du Fort.

The plank which was of pine, 16 feet long and 3 inches thick, was laid diagonally, giving a width on the square of 12 feet for traffic. The length covered was 400 feet. The rip-rap, at the southerly approach, on west side, was also repaired, and the guard railing on the same side, was strengthened by placing extra posts and braces in position.

*Chapeau Bridge.*—This bridge spans the Culbute channel of the Ottawa river, at the village of Chapeau, and connects Allumette island with the mainland on the Quebec side. The structure is in a very dilapidated condition, and repairs have to be made from time to time in order to prevent the bridge from falling into the river. Two stringers were put under the 'draw' span, and these were supported by two bents, with diagonal braces. The top of this span was covered with two courses of plank, the lower one being 3 inches and the top 2 inches in thickness. Two bents were also placed at pier No. 2, and the planking on the long approach from the Quebec side was patched at several places where it required attention.

*Interprovincial Bridge at Rapides des Joachims.*—At the Joachims rapids, there are two bridges which span two channels of the Ottawa river. The bridge across the slide channel is 307 feet in length and the one across the main channel is 432 feet, the width of both being 21½ feet. The roadway plank having become worn considerably, it became necessary to lay new material. The old plank was removed where excessive wear had occurred, and new pieces were laid to form a uniform surface, and then a covering of 2-inch pine was placed diagonally, forming a roadway 14 feet in width. All the steel work of both bridges received a coat of 'Esco' paint.

Four tiers of boards and a cap board were placed on the posts, at the approaches to the bridges, the cap board being set at a bevel by cutting off the tops of the posts at the proper angle. The length of the guard fencing is 1,290 lineal feet.



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## STATEMENT of Expenditure on Roadways and Bridges for Fiscal Year ended March 31, 1909.

Name of Work.	Province.	Electoral District.	EXPENDITURE.		EXPENDITURE.		EXPENDITURE.	
			\$	cts.	\$	cts.	\$	cts.
Bridges at Ottawa and Roadway and Bridge Approaches between Ottawa and Hull:			April 1-Nov. 30, 1908		Dec. 1, '08 Mar. 31, '09		Apr. 1, '08 Mar. 31, '09	
Ordinary repairs—								
Chaudiere Slide Bridge ..	Ontario ..	City of Ottawa ..	1,015	29	294	08	1,219	37
Union Bridge ..	Ont. and Que.	City of Ottawa and District of Wright.	968	75	128	42	1,067	17
Hull Slide Bridge ..	Quebec ..	District of Wright ..			8	50		
Roadway and bridge approaches between Ottawa and Hull ..	Ont. and Que.	City of Ottawa and District of Wright	1,222	65	409	17	1,631	83
			3,296 70		750 17		3,956 87	
Extraordinary Repairs—								
Devil's Hole, Hull causeway ..	Quebec ..	District of Wright ..	1,632	38	277	23		1,909 61
Pond Creek Bridge ..	"	" ..	360	93				360 93
Portage du Fort Bridge ..	Ont. and Que.	South Renfrew and Pontiac ..	135	50	388	40		523 90
Chapeau Bridge ..	Quebec ..	County of Pontiac ..	271	60				271 60
Joachim Bridge ..	"	" ..	845	58	1,234	28		2,079 86

OTTAWA, May 1, 1909.

JOS. KENT,  
*Accountant.*

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## SASKATCHEWAN.

## SHELLMOUTH BRIDGE OVER ASSINIBOINE RIVER.

The two piers and abutments of this bridge were completed in December, 1907, by contract with the J. McDiarmid Company, of Winnipeg, and the contract for the steel superstructure was let on October 23, 1907, to the Algoma Steel Bridge Company, of Sault Ste. Marie, Ont., for the amount of \$20,000.

The contract called for the erection of two through spans of 80 feet each and one through span of 160 feet.

The erection of this bridge was started on June 25, 1908, and was completed on August 22, of the same year.

The approaches have been constructed by the Shellmouth rural municipality at their own expense; they are of pile-trestle construction.

During the fiscal year ended March 31, 1909, the expenditure amounted to \$20,442.74.

## ALBERTA.

## EDMONTON BRIDGE.

Edmonton bridge connects the counties of Edmonton and Strathcona at the city of Edmonton, the population of which is 20,000.

The approaches to the Edmonton bridge had become so dangerous that the necessity of grading and raising their elevation to the bridge floor became imperative. Gravel or broken stone were selected as the most suitable material to insure permanent work. Arrangements were concluded with the city of Edmonton whereby they undertook to do the work and render a statement of cost. The top part as well as the bottom part of the flooring having become worn out, repairs had to be proceeded with from one end to the other.

The total expenditure during the last fiscal year amounted to \$1,094.38.

## STORAGE OF WATERS.

For a number of years, the question of the conservation of waters for the improvement of navigation or the production of power, has received attention from civil engineers and other officers of this department.

Some few works of this character have been constructed and are in operation but since this branch of the service has developed and requires special efforts to make provision for the near future and keep pace with the rapid development of the country, it has been decided to institute a complete and exhaustive study of our natural resources so that they may be improved and developed to their greatest capacity and become the means of further building up the trade and commerce of the Dominion.

## LAKE NIPISSING, ONT.

Lake Nipissing is the catch basin of the French river which empties into Georgian bay.

Last year an effort was made to place dams at the foot of the lake for the purpose of holding back and regulating the flow of waters. These dams were not properly placed and did more damage than good.

During the past fiscal year, a survey and examination was made, and it is the intention of the department to construct proper dams to regulate the flow of water from the lake.

At Monetville, on Shanty lake, four miles beyond the head of lake navigation, a roadway was constructed and two coffer dams placed so as to give 6 feet of navigation from Lake Nipissing to Shanty lake.

## RIVIÈRE DU LIÈVRE, P.Q.

The Rivière du Lièvre flows through the county of Ottawa, and empties into the Ottawa river at Buckingham, 18 miles below Ottawa.

The river was navigable, at high water, from Buckingham to High Falls, a distance of 22 miles, but during low water, navigation was checked at the foot of Little rapids, 12 miles above Buckingham. To improve the navigation and raise the level of the river, it was decided, in 1886, to construct a lock and dam at the Little rapids. The lock is 150 feet long, between gates, 32½ feet wide at the bottom; has eight feet of water on the mitre sill, and a lift of 13½ feet at extreme low water.

## TÉMISKAMING DAM, P.Q.

During the month of March, 1909, an examination was made to obtain foundations for the dam, to be built, at the foot of Lake Temiskaming.

Eight test pits were sunk; when it was found that there was no bed rock available but that a good strong boulder formation extended down at least 40 feet, it was decided to lay a monolithic slab of concrete, 3 feet thick, across the river with a cut-off wall of indefinite depth along the up-stream and down-stream edges.

Upon this platform, piers, 20 feet apart, will be built and sluiceways so arranged as to be closed by stoplogs of British Columbia fir.

It was, at one time, thought advisable to install stoplogs of reinforced concrete, but after careful examination the British Columbia fir stoplogs were adopted.

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A contract for the construction of this dam was awarded to Messrs. Kirby & Stewart on schedule of rates, for a sum amounting approximately to \$108,000.

The order in council accepting the tender was passed on March 13, 1909.

## YAMASKA, P.Q.

The Yamaska river takes its rise in the county of Brome, is the outlet of several large lakes and has a course of about 90 miles then empties into Lake St. Peter, 8 miles below Sorel.

To render the river navigable, for vessels of moderate draught, up to Belle Point or Rapide de la Grosse Roche, a distance of 20 miles, it was decided to construct a lock and dam at Ile a Cardin, about  $4\frac{1}{2}$  miles above the mouth of the river.

The work was completed in 1886, and gives a rise of  $5\frac{1}{4}$  feet. Dredging was done at the shoal below the lock and the navigation is very satisfactory.

## ST. ANDREWS LOCK, MAN.

These rapids extend over a distance of about 10 miles, the lower part being about 17 miles below the city of Winnipeg.

To overcome these rapids and give eight-foot navigation on the Red river, it was decided, in 1901, to construct a lock and dam.

The lock is 215 feet long, 45 feet wide and carries a depth of water over the mitre sill of 9 feet, is built of concrete with wooden gates.

The dam is also built of concrete, with the movable portion and a service bridge of steel.

It is expected that the work will be ready for navigation in the spring of 1910.

## LAST MOUNTAIN LAKE, SASK.

Last Mountain lake is situated in the counties of Regina and Humboldt.

In 1905, petitions were presented to the department, praying that a dam be constructed at Craven, and during the winter of 1905-6, a pier and timber dam were built below the outlet of the lake on the Qu'Appelle river, for the purpose of regulating the flow of water. The first cost was about \$1,000; the dam was damaged and rebuilt in 1906.

The work was intended to regulate the flow of the waters and raise the level of the lake so as to improve navigation, and after construction, the fishery inspector of the district, commended the department for raising the level which improved the waters and increased the supply of whitefish.

The department is now making preparations to dredge the lake and outlet, and during the past fiscal year, in order to meet the requirements, a regular dredging fleet has been constructed, composed of the following vessels:—A steel frame tug, two scows and a dredge hull, dredge machinery, boiler and engines. All the work is practically completed, excepting a small percentage of work to be done to the living quarters of the dredge, and the vessels will be launched at the opening of navigation.

Total amount expended, \$1,766.37.

## SESSIONAL PAPER No. 19

## CEMENT LABORATORY.

OTTAWA, April 17, 1909.

E. D. LAFLEUR, Esq.,

Chief Engineer, Public Works Department.

SIR,—I have the honour to transmit herewith the annual report of the cement laboratory for the fiscal year ended March 31, 1909.

I have the honour to be, sir, yours obediently,

(Sgd.) GEO. E. PERLEY,  
*Engineer in Charge.*

During the last twelve months, or since March 31, 1908, all samples of cement and other building material submitted to this branch of the department have been fully tested and reported upon.

In the past twelve months, 1,454 samples were submitted to this branch for test purposes, which number shows an increase of 234 samples or 20.35 per cent over the same period last year.

Of the 1,454 samples tested, 1,250 were accepted and 204 rejected; of the 204 condemned, 144 were Samson Portland cement, 26 were Hercules Portland cement, 18 were Alpina Portland cement, 15 were Star Portland cement and one was sand.

The 1,454 samples received were from the following:—

Engineers of the Public Works Department.. . . .	1,358
Outside engineers.. . . .	57
Cement manufacturers.. . . .	18
Contractors.. . . .	10
Architects of the Public Works Department.. . . .	5
Marine and Fisheries Department.. . . .	3
Deputy Minister, Public Works Department.. . . .	2
Members of parliament.. . . .	1

The 1,454 samples received were of the following brands:—

Samson Portland cement, manufactured in Owen Sound, Ont.	1,054
Star Portland cement, manufactured in Malbank, Que.. . .	125
International Portland cement, manufactured in Hull, Que.	64
Belleville Portland cement, manufactured in Belleville, Ont..	55
Monarch Portland cement, manufactured in Lakefield, Ont., and Montreal.. . . .	35
Hercules Portland cement, manufactured in Owen Sound, Ontario.. . . .	27
Maple Leaf Portland cement, manufactured in Atwood, Ont.	26
Alpina Portland cement, manufactured in Alpina, Mich.. . .	18
Exshaw Portland cement, manufactured in Exshaw, Alta..	12
Lehigh Portland cement, manufactured in Belleville, Ont..	7
Peters Portland cement, manufactured in England.. . . .	5
Imperial Portland cement, manufactured in Owen Sound, Ontario.. . . .	15

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Samples of sand.. . . . .	6
Vulcan Portland cement, manufactured in Montreal, Que..	1
Buffalo Portland cement, manufactured in Calgary, Alta..	1
Sample of marl.. . . . .	1
Sample of clay.. . . . .	1
Sample of limestone.. . . . .	1

The principal works from which the above-named samples were received were:—

St. Andrews rapids lock and dam, Manitoba.  
 Breakwater at Cow Bay, Port Morien, N.S.  
 Breakwater at Goderich, Ont.  
 Wharf at Sand Point, Ont.  
 Breakwater superstruction at Port Stanley, Ont.  
 Dam at Chaudiere falls, Hull, Que.  
 Quebec harbour improvements, Quebec, Que.  
 Breakwater at Bayfield, N.S.  
 Revetment wall, Tecumseh Park, Chatham, Ont.  
 Ice piers in River St. James, Laprairie, Que.  
 Wharf, Lake Megantic, Agnes, Que.  
 Wharf, Southampton, Ont.  
 Breakwater at L'Ardoise, N.S.  
 Breakwater at Neil's Harbour, N.S.

In the past year, 8,670 briquettes and 93 chemical analysis and 469 specific gravity tests were made in this laboratory, which number of briquettes, chemical analysis and specific gravity tests show a considerable increase over last year.

PART IV.—APPENDIX 'A.'

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INTERIM REPORT

ON THE

GEORGIAN BAY SHIP CANAL SURVEY

BY

C. R. Coutlee, C.E.





## GEORGIAN BAY SHIP CANAL SURVEY,

DEPARTMENT OF PUBLIC WORKS OF CANADA,

OTTAWA, April, 1909.

A. ST. LAURENT, Esq.,

Asst. Deputy Minister, Public Works Department,  
Ottawa.

SIR,—I have the honour to forward a report on the work performed by the Georgian Bay Canal staff during the fiscal year 1908-9.

## GEORGIAN BAY SHIP CANAL SURVEY.

At the close of March, 1908, about half the plans in connection with this report had been completed and some had been lithographed, proofed and printed. These were for the most part general plans. The present fiscal year opened with a mass of work on detailed plans of locks and other structures. With the development of these details, the building up of the report continued; first the part dealing with alternative lines in rear of Montreal, at Bryson and at Pembroke was finally settled; then began a restudy of the storage and flow question which extended through the remainder of the year.

## METERING.

The month of May, 1908, was taken up with the metering of the flow of the main river and its tributaries. During former years, the river had been exceptionally low, but 1908 reached almost a record for high water, and in the autumn for low water. The occurrence was taken advantage of and all the tributaries were measured and later on examined in detail during the low stage.

## INTERIM REPORT.

During the month of June, the details of location and structures had so far advanced that an interim report was prepared. This presented the cost in detail of each proposed reach of the waterway and was completed by first of July—the first reliable estimate after fifty years of discussion.

## DEVELOPMENT OF VALLEY.

Notes regarding the development of the Ottawa valley were gathered from a number of sources, while the water fluctuations and subdivisions of the drainage area were being examined.

## STORAGE.

After the first week in August till the end of September, work was practically confined to the drainage area and a comprehensive system of storage. This was dependent upon a decision that even at highest spring flood there would not be a current greater than three feet per second in any part of the proposed route. Restricted sections of the river were therefore fixed and the flow they could pass at a velocity of three feet determined. Above such points, storage basins were sought of sufficient capacity to hold back the overplus of flow during the high water period. The restrained water would then become a reserve upon which to drain for power

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purposes during the autumn and winter. While this part of the report was under consideration the lithographed plans of structures and details were being proofed and a survey for proposed dredging in Aylmer lake was also under way.

## CHAUDIERE FALLS, OTTAWA.

The remarkably low stage of the Ottawa during the autumn of 1908 and the winter of 1909, was critically felt by the power owners at the Chaudiere falls. It became necessary for the department to divide the flow between the various companies and Mr. Matheson was detached for this service shortly after his return from East River, N.S., in December, 1908, till March, 1909.

## EAST TEMPLETON, QUE.

The steamboats plying below the city of Ottawa were troubled during the very low stages last autumn by the scant water over the Green shoals near the lighthouse opposite Templeton wharf, Ottawa county, Quebec. It was proposed to dredge a new channel corresponding with that laid down for the 22-foot navigation. Borings were taken over the area and a range line marked upon the ground. Messrs. Davy and Lamoureux were detached for this duty during February.

## STORAGE.

As before noted, an examination of the storage possibilities of the Ottawa watershed was continued throughout the year. This began with studies of plans available and, during May, meterings of flow were made, as follows:—

## List of Gauging, 1908, taken by D. H. Philp.

Locality.	Date.	Gauge.	Discharge c. f. s.	Remarks
Petawawa .....	May 18, '08	3.7	6994.	Gauge above C. P. R. bridge.
Bonnechère .....	" 19, '08	9.45 (?)	3901.	" at electric power dam ?
Madawaska .....	" 19, '08	36.2	18222.	" zero handrail of bridge.
" .....	July 15, '08	41.5	2750.	" " " "
" .....	Sept. 8, '08	43.8 estimated.	500.	" " " "
Mississippi .....	May 20, '08	?	2862.	16.8 ft. below base rail G. T. R. bridge.
Rideau .....	" 13, '08		9469.	9.55 ft. below top south abutment.
South Nation .....	" 23, '08		1016.4	Gauge torn out.
Gatineau .....	" 7, '08	213.16	47920	" at Chelsea.
" .....	" 12, '08	214.46	58459.	" " "
" .....	" 15, '08	214.67	63542.	" " "
Lievre .....	" 21, '08	"	27588.	W. S. 3 ft. below top pier bth falls.
Blanche (Thurso) ..	" 27, '08	1.2	448.9	Gauge set North Nation Mills.
North Nation .....	" 28, '08	6.2	3649.	
Rouge .....	" 29, '08	6.5	12163.	
Besserer's .....	" 6, '08	144.09	145246.	" foot Rideau locks.
" .....	" 11, '08	146.13	185719.	" " " "
" .....	" 14, '08	147.13	198660.	" " " "
Chute à Blondeau ..	June 13, '08	136.85 up Gren.	168009.	
" .....	"	92.49 " Caril.		
" .....	"	136.35 " Gren.		
Ste. Anne's. ....	" 15, '08	91.49 " Caril.	42917	
" .....	"	75.9 " Ste. Ann.	39280.	
Vaudreuil .....	" 17, '08	75.65 " Ste. Ann.		
" .....	"	134.93 " Gren.		
Ste. Geneviève .....	" 23, '08	89.82 " Caril.	32579.	
" .....	"	74.82 " Ste. Ann.		
" .....	"	135.52 " Gren.		
Dutchman .....	" 20, '08	90.49 " Caril.	32392.	
" .....	"	75.23 " Ste. Ann.		
" .....	"	135.68 " Gren.		
Ste. Rose .....	" 18, '08	90.82 " Caril.	17011.	
" .....	"	75.48 " Ste. Ann.		

## SESSIONAL PAPER No. 19

## MEMO. RE GAUGING OF OTTAWA RIVER AND TRIBUTARIES, 1908.

*Petawawa River.*—A gauging of this river was made from the steel road-bridge, just above the first chute on the Petawawa, on May 18, 1908. Gauge just above the Canadian Pacific Railway bridge read 3.7 or elevation 103.7, the zero of gauge being assumed at 100.0. This gauge was never tied in to the Georgian bay levels. The water surface was 4.2 below coping of the south abutment of steel road bridge on May 18, 1908. What was known as point No. 2, 1908, was used in the meter for this gauging.

May 18, 1908: Gauge, 3.7; discharge, 6994 c.f.s.

Meter No. 1 was used to make the gauging.

*Petawawa Discharge Curve.*—The several meterings taken on the Petawawa have been plotted and a new discharge curve drawn from which a new daily discharge curve has been made for 1905 and 1908 whenever gauge readings were taken.

*Bonnechère River.*—A gauging was made of this river from the Canadian Pacific Railway bridge, just west of the town of Renfrew, on May 19, 1908. Gauge at concrete dam of the Electric company's power house read 9.45. It seems as though the elevation of this gauge has been changed since the previous gaugings were taken, but as far as I can learn, the gauge was never referred to a Bench Mark.

Point No. 3, 1908, was used for this metering.

May 19, 1908, W.S. 26.9 below base of rail of Canadian Pacific Railway bridge, was 25.9 below earlier in spring.

May 19, 1908: Gauge, 9.45; discharge, 3,901 c.f.s.

Meter No. 1 was used in making this gauging.

*Bonnechère Discharge Curve.*—As the gauge reading of May 19, 1908, does not seem to agree with readings of previous years, the gauging taken on that date has not been used for the discharge curve. Regular gauge readings were not kept on the Bonnechère this year but in 1905 there were, so a daily discharge curve was plotted for 1905. The gauge might be referred to a B.M. by a line of levels.

*Madawaska River.*—A gauging of this river was made from the Wallace or Clay Bank bridge about 3 miles south of the town of Arnprior on May 19, 1908, when the W.S. was 36.2 feet below the top of the iron hand rail on the upstream side of the bridge. The gauge on the upstream side of the dam at McLachlin's mill on the Madawaska read 6.0 feet, dam being full open. Another gauging was made from bridge on July 15, 1908, when the W.S. was 41.5 feet below the hand rail, and the gauge at the dam read 2.95 feet with the dam closed, except the log slide. The gauge that has been used in previous years is affected by the opening and closing of the dam, hence the hand rail on the Wallace bridge was used as datum for plotting the discharge curves. Point No. 3, 1908, was used on May 19, 1908, metering and point No. 4 on July 15, 1908.

May 19, 1908: W.S. 36.2 feet below hand rail; discharge, 18,222 c.f.s.

July 15, 1908: W. S. 41.5 feet below hand rail; discharge 2,730 c.f.s.

September 8, 1908: W.S. 43.8 feet below hand rail; discharge (estimated), 500 c.f.s.

Meter No. 1 used for both meterings.

## NOTES RE MADAWASKA RIVER IN 1908.

April 23, 1908, placards for bridge at dam giving warning that bridge is unsafe.

May 8 to 15, 1908: Water high but dam stood test; gauge above dam on May 2 to 6, 8.9; May 9, 8.1; May 13, 7.3; May 19, 6.0; May 30, 5.0; started to put in stoplogs August 28, 1.0 on gauge, dam closed. See Parson's letter 28th; September 8, gauge above dam 2.0 feet below zero W. S. 43.8 feet below hand rail at Wallace bridge. Water said to be as low now as had been for twenty years.

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*Madawaska Discharge Curves.*—As more meterings are required on this river, only an approximate discharge curve has been made. A gauge should be placed at the Wallace bridge, and daily records kept so as to get at the daily discharge curve.

September 8, 1909, a sixteen foot gauge was placed on downstream side of boom pier, a quarter of a mile below the Wallace bridge. At the same time, efforts were made to get a metering from the bridge, but the current was not strong enough to operate the meter so several floats were tried which together with observations at different points in river lead to the conclusion that the low water flow is about 500 c.f.s. instead of 900 c.f.s. as thought previously.

*Mississippi River.*—A gauging of this river was made on May 20, 1908, from the two road bridges near Galetta. The gauge which had been previously used had been carried away. New B.M.s. were established for both branches of the river. The B.M. for the branch farther from Galetta is a nail driven in top of plank on upper face of first pier from island, W.S., on May 20, 1908, was 3.9 feet below nail; was earlier in year 2.6 feet below. The B.M. for branch near Galetta is a nail driven in plank of retaining wall on island side of bridge and upstream from bridge. W.S., May 20, 1908, was 1.95 feet below nail and was earlier in year 0.75 feet. May 20, 1908, W. S. 16.8 feet below base of rail on Grand Trunk Railway bridge; was 15.1 feet below. Dam at falls full open. Point No. 3, 1908, used in this gauging.

May 20, 1908: Gauge discharge, 2,862 c.f.s.; W.S., 16.8 feet below base of rail, Grand Trunk Railway bridge. Meter No. 1 used for this gauging.

*Mississippi Discharge Curve.*—As noted above, the gauge was removed from this river last spring and the relation of this year's gauging to the previous gaugings is not known, so the discharge curve was drawn without reference to the gauging taken on May 20, 1908. A daily discharge curve has been drawn for 1905.

No daily gauge readings were kept on this river during 1908.

*Rideau River.*—A gauging of this river was made on May 13, 1908 from the Grand Trunk Railway bridge south of Ottawa. On that date, the W.S. was 9.55 feet below coping of the south abutment of the Grand Trunk Railway bridge. When the new road bridge, just east of the Grand Trunk Railway bridge was built, the gauge on the Rideau was torn out, and as it was never referred to a B.M. this year's level has not been tied in to the old levels.

May 13, 1908, W.S. 9.55 feet below abutment coping. Discharge, 9,409 c.f.s.

Meter No. 1, point No. 1, 1908, was used for this gauging.

*Rideau Discharge Curve.*—No daily gauge readings were kept on this river in 1908. As the gauge was torn away previous to our gauging May 13, 1908, no relation has been found between our gauging and previous gaugings, so the discharge curve has been plotted without our gauging in 1908. A daily discharge curve has been plotted for 1905.

*Gatineau River.*—Three gaugings were made of this river in 1908, May 7, 12 and 15.

May 7, 1908—Gauge, 213.16. Discharge, 47,920 c.f.s.

May 12, 1908—Gauge, 214.46. Discharge, 58,459 c.f.s.

May 15, 1908—Gauge, 214.67. Discharge, 63,542 c.f.s.

Meter No. 1, point No. 1, 1908, used in these gaugings.

*Gatineau Discharge Curves.*—A discharge curve has been plotted for this river and a daily discharge curve for 1900 to 1906 and part of 1908. The gauge readings on his Chelsea gauge for 1907 and 1908 have been secured from Mr. Keefer, C.E., and as soon as the elevation of his zero of gauge can be secured the daily discharge for 1907 and 1908 can be plotted.

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*Lièvre River.*—One gauging was taken on this river on May 21, 1908, about five miles north of Buckingham near Newton's place. A nail driven in corner post of fence in front of Newton's house was used as B.M. The nail is 4.4 feet above ground surface. On May 21, 1908, W.S. was 7.4 feet below B.M.; had been 5.7 feet below nail. The gauge between the two upper falls at Buckingham was torn out during the flood this spring, but the W.S. on May 21, 1908, was 3 feet below the top of timber of the pier just below the upper falls and just near the end of the shorter log slide. Floats were used in making this gauging.

May 21, 1908, gauge. Discharge, 27,588 c.f.s.

*Lièvre River Discharge Curves.*—The discharge curve cannot be completed until the gauge height of May 21, 1908, is secured, but a daily discharge curve of the river for 1906 has been plotted using the gaugings taken in previous years. No gauge readings have been taken on this river this year.

*Blanche River at Thurso.*—One gauging was made of the river on May 27, 1908, from the Canadian Pacific bridge three miles east of Thurso, P.Q. On May 27, 1908, W.S. 28.7 feet below base of rail on Canadian Pacific Railway bridge. The elevation of the water surface at this gauging section is affected by the back water from the Ottawa.

Gauge at Black's Mill read 1.2 on May 27, 1908. All dams on the upper Blanche closed. Gauge at Black's Mill read 4.7 about May 1, 1908. Spring flood last about three weeks. Drive not down on May 27, 1908.

May 27, 1908, gauge, 1.2. Discharge, 449 c.f.s.

Meter No. 1 and point No. 3 were used on this gauging.

*Blanche Discharge Curves.*—No discharge curve has been plotted of this river as the gauge used was affected by dams, one above and one below the gauge.

*North Nation River.*—A gauging of this river was made on May 28, 1908, from the road bridge just west of Plaisance, P.Q. The river gauge was located at North Nation Mills, but was torn out in spring of 1908, but the gauge on May 28, 1908, would read 6.2. On May 13, 1908 gauge read about 9.4. In both cases dam full open. Gauge was replaced as near as possible to old elevation on May 28, 1908.

Drive not down by May 28, 1908.

May 28, 1908, Gauge, 6.2. Discharge, 3,649 c.f.s.

Meter No. 1 and point No. 3, 1908, used for this gauging.

*North Nation Discharge Curves.*—A discharge curve has been plotted and daily discharge curve for 1905. No gauge records were kept on this river this year.

*Rouge River.*—A metering was made of this river on May 29, 1908, at Johnson's ferry, the ferry cable being used as a base and the ferry as a boat. The gauge at Ross' powerhouse read 6.5 on May 29, 1908. About May 1, 1908, gauge read 9.5. On May 29, 1908, about 4 feet of water was over crest of dam and the power people said they had 27 feet of head. In powerhouse they had two 30-inch wheels on  $\frac{1}{2}$  gate and one 35-inch wheel on  $\frac{1}{2}$  gate. The 30-inch wheels were made by Jenchs Machine Co., of Sherbrooke, and the 35-inch, a Kennedy, made in Owen Sound.

May 28, 1908—Gauge 6.5. Discharge 12163 c.f.s.—6.8 c.f.s. per sq. mile.

Meter No. 1 and point No. 3, 1908, used in this gauging.

*Rouge Discharge Curves.*—The gauging of this river taken this year does not agree very closely with the previous gaugings, so the curve was drawn omitting this year's gaugings, and from this has been plotted a daily discharge curve for 1906. No gauge records were kept this year.

If a plan and profile of the dam could be got and also relation between zero of gauge and crest of dam, the measurement of May 29, 1908, could be checked.

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*Ottawa River at Besserer's Grove.*—Three gaugings were made of the Ottawa river at Besserer's Grove in 1908: May 6, 11 and 14. The gauge used for these measurements is at the foot of Rideau locks, Ottawa. In making these gaugings, a base line was laid out on the south side of the river, and also a range. A launch was used to take the meter readings, the position of the launch on the range being located by a sextant angle to the two ends of the base.

Meter No. 1 and point No. 1, 1908, were used in all three gaugings: May 6, 1908, gauge 144-09, discharge 145246 c.f.s.; May 11, 1908, gauge 144-13, discharge 185719 c.f.s.; May 14, 1908, gauge 147-13, discharge 198660 c.f.s.

*Discharge Curves.*—A discharge curve has been plotted and also a daily discharge up till June, 1908.

*Ottawa River at Chute à Blondeau.*—A gauging of the Ottawa river was made at Chute à Blondeau on June 13, 1908. The same methods were used as at Besserer's Grove. On that date, W.S. at gauging section was elevation 93-02; was earlier in spring 97-82.

Meter No. 1, point No. 3, 1908, was used in this gauging.

June 13, 1908—

Upper Grenville gauge, 136-85.

Upper Carillon gauge, 92-49.

Discharge, 168009 c.f.s.

The upper Carillon gauge seems the better gauge to use in plotting this discharge curve for this gauging section.

About June 11 or 12 the steamer *Ottawan* had to be towed up the Chute à Blondeau because of the current. On June 13, current about six miles per hour.

*Discharge Curve.*—No discharge curves have been drawn.

*Ottawa River at Ste. Anne de Bellevue.*—A gauging was made here on June 15, 1908. The same method was employed as at Besserers' Grove and at Chute à Blondeau.

Meter No. 1, point No. 3 used in this gauging.

June 13, 1908—

Upper Grenville gauge, 136-35.

Upper Carillon gauge, 91-49.

Upper Ste. Anne gauge, 75-9.

Discharge, 42917 c.f.s.

*Discharge Curves.*—Discharge curves have been tried, using Upper Ste. Anne gauge, but do not seem to be very valuable.

*Ottawa River at Vaudreuil.*—A gauging of the Ottawa river was made here on June 17, 1908, from the Canadian Pacific Railway bridge. Meter No. 1, point No. 3, used at this gauging.

June 17, 1908—

Upper Grenville gauge, 135-85.

Upper Carillon gauge, 91-00.

Upper Ste. Anne gauge, 75-65.

Discharge, 39280 c.f.s.

*Discharge Curves.*—Ditto as per Ste. Anne.

*Ottawa River at Ste. Geneviève.*—A gauging was made here on June 23, 1908, the base line and launch method being used as at Besserer's Grove. Meter No. 1, point No. 3, 1908, being used in the gauging.

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June 23, 1908—

Upper Grenville gauge, 134.93.

Upper Carillon gauge, 89.82.

Upper Ste. Anne gauge, 74.82.

Discharge, 32579 c.f.s.

*Discharge Curves.*—Ditto as per Ste. Anne.

*Dutchman Channel.*—A gauging was made here on June 20, 1908, the launch and base line method being used as at Besserer's Grove. Meter No. 1, point No. 3, 1908, being used in the gauging.

June 20, 1908—

Upper Grenville gauge, 135.52.

Upper Carillon gauge, 90.49.

Upper Ste. Anne gauge, 75.23.

Discharge, 32392 c.f.s.

*Discharge Curves.*—Ditto as per Ste. Anne.

*Mille Isles River.*—A gauging of this river was made on June 18, 1908, from the Canadian Pacific Railway bridge at Ste. Rose, W.S. was 13.3 feet below base of rail on bridge, June 18, 1908; had been 3 feet higher. Meter No. 1 and point No. 3, used in making this gauging.

June 18, 1908—

Upper Grenville gauge, 135.68.

Upper Carillon gauge, 90.82.

Upper Ste. Anne gauge, 75.48.

Discharge, 17011 c.f.s.

## MEMO. RE SLOPES.

*Ste. Anne de Bellevue.*—June 16, 1908. A line of levels of the water surface was run from the head of the upper pier to the foot of the lower pier at Ste. Anne de Bellevue.

*Rapids at Head of Mille Isles River.*—June 20, 1908. A line of levels of the water surface was run from head of pier at the grist mill to the foot of the slope in the rapids at the head of Mille Isles river. The speed of the current was taken at this point and found to be 16 feet per second.

*Dutchman Channel.*—June 22, 1908. A line of levels of the water surface was run from the head of these rapids to the head of Ile Boiret, and the speed of the current taken and found to be 3.5 feet per second.

*Vaudreuil.*—June 17, 1908. A line of levels of the water surface was run from the head to the foot of the rapids.

*Grenville.*—June 9 and 10, 1908. A line of levels of the water surface was run down the rapids, from the head of the Grenville Canal to about one-quarter mile below the Great Northern bridge. The speed of the current was 16 feet per second.

MEMO RE GAUGINGS OF THE OTTAWA RIVER AND TRIBUTARIES IN THE SPRING 1903, BY  
ARTHUR SURVEYER.

The velocity was measured with floats.

The subsurface float consisted of two vertical sheets of galvanized iron, 15 inches by 9 inches set at right angles and intersecting in their centre lines, with cylindrical air cavities  $1\frac{1}{2}$  inches in diameter along the upper edges of the vanes.

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This subsurface float was held at 0.6 of the depth by a fine cord attached to a surface float.

The rod float used was a galvanized iron tube  $1\frac{1}{2}$  inches in diameter and loaded with shot. The mean velocity in the case of the rod float was obtained by using Francis' formula.

$$V' = V [1.0 - 0.116] \sqrt{D - 0.1}.$$

in which  $V'$  = mean velocity

$V$  = observed velocity

$D$  = depth—immersion of rod depth.  
depth.

It will be noticed that the rod floats measurements are slightly larger but on the whole the discharges calculated by the two methods seem to correspond very well.

*Ottawa River at La Passe.*—All gaugings here are referred to the Georgian Bay Ship Canal levels, read on the La Passe gauge.

Date.	Gauge.	Discharge in c.f.s	Remarks.
May 15, 1908.....	353.85	124,838	Rod float method. Calm.
" 16, " .....	354.0	124,703	Subsurface float method. Up stream wind.
" 18, " .....	354.05	131,267	Rod float method. Calm.
" 19, " .....	353.95	128,754	Subsurface float method.
" 23, " .....	353.8	126,824	Windy, Subsurface float. Calm.

Gauge readings were taken at La Passe from May 13 to June 11, 1908.

Date.	Water
May 13, 1908.....	353.1
" 17, 1908.....	354.1
" 29, 1908.....	353.3
June 6, 1908.....	354.1
" 11, 1908.....	353.1

It will be noticed that at 20 days interval the water rose to the same elevation. The Coulonge river also had a second rise during the first north water days of June but did not come within a foot of its highest level on May 18.

On May 22, 1908, the water level at Spotswood was 355.3, at the mouth of the Coulonge river 354.5, and at La Passe 353.8, giving a difference of elevation of 1.5 between Spotswood and La Passe.

#### THE CALUMET AND ROCHER FENDU CHANNELS.

The measurements were all taken on the Calumet channel a quarter of a mile below the Grand Marais ferry. The elevations all refer to the La Passe gauge and Mr. Johnson's curve refers to the Bryson gauge, but by comparing gauge readings taken on the same date and at different stages of the river, we can arrive at a fairly close estimate of the water level at Bryson on the required day.



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Gauge at La Passe.	Gauge at Bryson.	Difference.
344.2	342.39	1.81
349.76	346.04	3.72
352.01	374.44	4.57
May 16, '08. 354.0	X = 348.6	5.4 Calculated.

## CALUMET CHANNEL.

Date.	Gauge.	Discharge in c.f.s.	Remarks.
May 16, 1908.....	354.0	47,453	Rod float method.
" 18, " .....	354.05	45,528	Subsurface float method.
" 19, " .....	353.95	46,296	" " "
	354.0	46,415	Mean of 3 gaugings.

## ROCHER FENDU CHANNEL.

These figures are calculated from the observations taken at La Passe and at Calumet channel. The elevations refer to the La Passe gauge.

Date.	Gauge.	Discharge in c.f.s.
May 16, 1908.....	354.0	77,250
" 18, " .....	354.05	85,739
" 19, " .....	353.95	82,488
	354.0	81,823 Mean of three.

*Black River.*—Measurements were taken about two miles above Black Falls and are referred to the G.B.C.S. gauge at the Black Falls bridge.

Date.	Gauge.	Discharge in c.f.s.	Remarks.
May 21, 1908. ....	5.7	7,411	Surface float method.
22, 1908 .....	5.5	6,710	Subsurface float method.

The highest reading for the spring 1908, was 6.5 taken by Rochon at the powerhouse; he, however, had not sent in his notes September 25, 1908.

*Coulouge River.*—The measurements were taken just above Coulouge village and the elevations are referred to Georgian bay levels. The High Falls gauge is situated above the falls, six miles up stream, and for some reason does not fluctuate with the gauge at Coulouge village.

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Date.	Gauge.	High Falls.	Discharge in c.f.s.	Remarks.
May 20, 1908....	356.8	8.7	14,868	Subsurface float method.
" 26, " ....	355.85	8.5	11,636	" " "
" 26, " ....	355.85	8.5	11,633	" " "

Gauge readings at Coulonge Village above C. P. R. track by party.

Date.	Water Elevation.
May 18, 1908.....	357.8
" 29, " .....	355.6
June 3, " .....	355.5
" 8, " .....	355.6

## SLOPE FROM LA PASSE TO COULONGE VILLAGE.

Water elevation on May 20, 1908—

At La Passe.. . . . .	353.90
At the mouth of the Coulonge river.. . . . .	354.6
At C.P.R. bridge on Coulonge river.. . . . .	355.1
At Coulonge village above C.P.R. tracks.. . . . .	356.8

Mr. A. J. Matheson visited Mattawa May 9, and collected data *re* condition of Timiskaming lake and Mattawa river, then followed down river to Pembroke examining the DuMoine, Petawawa, Indian, Muskrat, the Bonnechere, Madawaska and Mississippi were also inspected at high stage. This was followed by meterings at Petawawa, Renfrew and Arnprior and Galetta, May 17 and 19, the period of highest water.

During the last week in May, the Gatineau and Lièvre were examined and notes gathered with reference to high water conditions.

During July an investigation was made along the Rivière des Prairies for the flow at Ile Visitation and the material to be dredged at Bout de l'Ile.

The mill site opposite Des Prairies village was also examined. At Ste. Anne and Cap a l'Orme the river slope and rate of current were determined.

In August, various lakes throughout the lower half of the Gatineau were examined for storage, but the upper half of this watershed is difficult of access. In fact, a regular survey party must some time be organized.

## GRAND LAKE VICTORIA.

From the studies made it appeared that only sufficient storage for a flood like that of 1876 was available and then every individual reservoir would be taxed to its limit. To obviate this high pressure condition it was resolved to despatch a party to Grand Lake Victoria, to determine the possibility of discharging flood water north onto the Hudson Bay slope. This would disencumber the lower reservoirs of 12,000 square miles of drainage during the peak of a great flood.

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Accordingly, a reconnaissance party left during the first week of February and after seven days travel on foot reached the height of land. It was found quite feasible to divert the flow as contemplated.

A topographical survey of the lake shores showed that a storage of twenty feet could easily be held.

The party returned about the middle of March, exploring the Winewaska river to Expanse lake. Heavy snowstorms however delayed their progress and provisions ran short, so that a reconnaissance of Lakes Expanse and Quinze was impracticable.

I have the honour to be, sir,

Your obedient servant,

C. R. COUTLEE.



PART V.

REPORT ON GOVERNMENT TELEGRAPH LINES

FOR THE

FISCAL YEAR ENDED MARCH 31, 1909



DEPARTMENT OF PUBLIC WORKS,  
OFFICE OF THE GENERAL SUPERINTENDENT,  
OTTAWA, ONT., June 18, 1909.

NAPOLÉON TESSIER, Esq.,

Secretary, Department of Public Works,

SIR,—I beg to submit herewith my report on the Government Telegraph Service for the fiscal year ended March 31, 1909.

This report, as usual, is prefaced by a list to the present date of the land lines and cables in operation; with data of lengths, year of construction, number of offices at present established, and an estimate of the traffic handled in each instance.

The usual tabular statements giving list of offices, operating staff, &c., in the several districts are appended to the report; likewise the tariff sheets, showing the rates charged for messages on the several lines.

I have the honour to be, sir,

Your obedient servant,

D. H. KEELEY,  
*General Superintendent.*

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# THE GOVERNMENT TELEGRAPH SERVICE

## DOMINION OF CANADA.

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HEAD OFFICE: DEPARTMENT OF PUBLIC WORKS, OTTAWA.

(June 1, 1909.)

### EXECUTIVE.

The Hon. William Pugsley, Minister of Public Works.  
J. B. Hunter, Esq., Deputy Minister of Public Works.

### STAFF AT HEADQUARTERS.

D. H. Keeley, General Superintendent.  
M. W. Crean, Technical Assistant to Superintendent.  
J. E. Gobeil, Technical Assistant to Superintendent.  
Miss A. Hardeastle, Secretary to General Superintendent.  
J. P. Demartigny, Accountant, Telegraph Branch.  
J. E. Bray, Assistant Accountant, Telegraph Branch.

### GENERAL INSPECTORS.

A. B. McDonald, North Sydney, Cape Breton, lines in Nova Scotia and New Brunswick.  
J. S. Macdonald, Edmonton, Alta., lines in Northwest and south British Columbia.

### SUPERINTENDENCIES.

Edwin Pope, Quebec, dist. supt., North Shore and G.N.W. traffic.  
J. C. Taché, dist. supt., Chicoutimi district and North Shore to Bersimis.  
E. H. Tetu, Long Point of Mingan, dist. supt., North Shore, East Bersimis.  
P. Pouliot, dist. supt., Quarantine line, &c., to Grosse Isle.  
A. Malouin, dist. supt., West Point, Anticosti Island.  
A. Le Bourdais, Grindstone, dist. supt., Magdalen Islands.  
D. C. Dawson, St. John, N.B., dist. supt., Cape Breton system.  
Mrs. C. C. Seely, Grand Manan, N.B., dist. supt., Bay of Fundy system.  
J. McR. Selkirk, Leamington, Ont., dist. supt., Pelee Island system.  
Robt. C. Macdonald, Edmonton, Alta., dist. supt., Northwest Territories.  
Wm. Henderson, Victoria, dist. supt., British Columbia, south.  
C. S. Stevens, Summerland, B.C., supt., Penticton line.  
J. T. Phelan, Vancouver, B.C., supt., Yukon system.  
H. Gilchen, Whitehorse, Y.T., dist. supt., Atlin-Boundary.



## SESSIONAL PAPER No. 19

## GOVERNMENT TELEGRAPH SERVICE.

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Messages Sent.
			Land Lines.	Cables.	Total.		
			Miles.	Kt's.			
Newfoundland.	Port au Basque—Cape Ray	1883	14		14	2	
Nova Scotia.	North Sydney—Meat Cove (with loops).	1880-02	165½				
"	Across Bras d'Or channel.	1880					
"	" St. Ann's Harbour.	1887					
"	" Ingonish Harbour.	1887			167	18	
"	French River						
"	Englishtown						
"	Big Bras d'Or—Kempt Head	1904	20		20	3	
"	Meat Cove—St. Pauls Island	1890		20	23	1	
"	On St. Pauls Island	1890	3				
"	Mabou—Meat Cove	1887-00	109		109	9	
"	Barrington—Cape Sable	1883	16				
"	Across Bear Point Channel.	1883		1½	17½		
"	" Lt. House Channel	1883					
"	Mabou—Port Hawkesbury	1903	41½		73½		
"	Port Hawkesbury—St. Peters	1903	32				
"	St. Peters—Main à Dieu	1904	84½				
"	Main à Dieu—Scatarie	1902	1	1½	129½	16	15,017
"	On Scatarie Island	1904	7½				
"	Gaharous—North Sydney	1904	35½				
"	Little Bras d'Or—Kempt Head	1905	36		36		
"	North Sydney—Eskasoui	1905	37		37	13	
"	Castle Bay—Grand Narrows	1908	16		16	3	
"	North Sydney—Little Bras d'Or (second wire)	1906	6		6		
"	Grand River—Enon	1907	19½		19½	2	
	<i>Port Hood, Island Branch:</i>						
	(Length of construction in loop.)						
"	On mainland at Port Hood	1907	½				
"	Port Hood—Smiths Island	1907		2			
"	On Smiths or Inner Island	1907	4		13½	4	
"	Smiths Island to Henry Island	1907		3			
"	On Henry or Outer Island	1907	4				
New Brunswick.	Chatham—Escombiac	1885	42½		42½	6	785
	<i>Bay of Fundy System:</i>						
"	Eastport—Campobello	1880		1½			
"	On mainland Eastport	1880	½				
"	On Campobello Island	1880	7½				
"	Campobello—Grand Manan	1880		7½	44½	11	2,301
"	On Grand Manan Island	1880	25½				
"	Grand Manan—Cheneys Island	1890		½			
"	On Cheneys Island	1890	¾				
"	Cheneys Island—Whitehead Island	1890		¾			
"	Partridge Island—Fort Dufferin	1900		¾			
	<i>Magdalen Island System:</i>						
Quebec.	Meat Cove, C. B. Magdalen Islands	1880		55			
"	On Magdalen Island	1881-02	83½	½			
"	Grosse Isle—Bryon Island	1902		11			
"	Bryon Island—Anticosti	1902			158	13	2,852
"	On Bryon Island (Loop)	1903	1				
"	House Harbour—Pointe Basse (Loop)	1902	4				
"	Pointe Basse—South Beach (Loop)	1905	3				
	<i>Anticosti System:</i>						
"	Gaspé—L'Anse à Fougère—	1881	28				
"	L'Anse à Fougère—Anticosti	1881		44½	316½	9	954
"	On Anticosti Island	1881-90	223½				
"	Anticosti—Long Point, Mingau	1890		21			
	Carried forward.		1,071½	172¾	1,244	110.	21,809

\*This cable section, 93 knots, was withdrawn in 1906.

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GOVERNMENT TELEGRAPH SERVICE.—*Con.*

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Messages Sent.
			Land Lines.	Cables.	Total.		
			Miles.	Kt's.			
	Brought forward.....		1,071½	172½	1,244	110	21,809
Quebec	Bay St. Paul—Chicoutimi.....	1881-04	98	...	98	6	
"	St. Alexis—St. Catherines Bay.....	1904	78	...	78	5	
"	Murray Bay—St. Agnes.....	1904	14½	...	14½	2	
"	Bay St. Paul—Petite River.....	1904	13	...	13	1	
"	Chicoutimi—St. Charles.....	1903	37	...	37	...	
"	St. Anne—Lac Claire.....	1903	15	...	61	10	
"	St. Anne—St. Fulgence.....	1903	9	...	9	...	
"	St. Fulgence—Sacré Cœur.....	1905	57½	...	57½	4	
"	Murray Bay—St. Catherines Bay (2nd wire)	1904	44½	...	44½	...	
"	St. Alexis—Chicoutimi (2nd wire).....	1905	14½	...	14½	...	21,686
"	St. Charles—St. Henri de Taillon.....	1907	24½	...	24½	4	
	<i>North Shore Line:</i>						
"	Murray Bay—Chateau Bay.....	1881-01	1,028½	...	1,028½	...	
"	Across Saguenay River.....	1883	...	1½	...	1052	
"	Chateau Bay—Belle Isle.....	1901	...	22½	...	...	
"	Bersimis—Godbout.....	1904-05	104	...	104	68	
	<i>Quarantine System:</i>						
"	Quebec—L'Ange Gardien.....	1885	13	...	13	...	
"	L'Ange Gardien—Orleans Island.....	1885	...	490	...	...	
"	On Orleans Island.....	1885	29½	...	29½	...	
"	Orleans Island—Isle Réaux.....	1889	...	2	52½	8	1,769
"	On Isle Réaux.....	1889	2½	...	2½	...	
"	Isle Réaux—Grosse-Isle.....	1889	...	2	...	...	
"	On Grosse Isle (all told).....	1885-94	3½	...	3½	...	
"	St. Jean—St. Famille (loop).....	1904	5½	...	5½	1	
"	St. François—St. Francois Nord (looped wire).....	...	5	...	5	...	
"	St. François—Baie St. Paul.....	1906	...	30	30	...	
"	Crane Island to Montmagny.....	1905	...	3½	3½	...	
"	Crane Island to Grosse-Isle.....	1907	...	5	5	...	
	<i>Pelee Island System:</i>						
Ontario.	Leamington—Point Pelee.....	1889	12	...	12	...	
"	Leamington Dock—Pelee Island.....	1901	...	17½	42½	10	1,501
"	On Pelee Island.....	1889-00	13½	...	13½	...	
Northwest.	Qu'Appelle—Edmonton.....	1883	625	...	625	16	
"	Moosejaw—Wood Mountain.....	1885	90½	...	90½	2	
"	Wood Mountain—Willow Bunch.....	1904	38	...	38	...	
"	Edmonton—Indian Ag. & Stoney Plain.....	1904	24	...	24	5	
"	Edmonton—Athabaska Ldg.....	1904	98	...	98	...	
"	Duck Lake—Batoche.....	1902	9	...	9	...	
"	Duck Lake—Indian Agency.....	1902	3½	...	124	3	18,254
"	Edmonton—St. Albert.....	1887	9	...	36	3	
"	St. Albert—Qui Barre and Alexandria.....	1902	27	...	27	1	
"	Lloydminster (loop) near Pitt.....	1904	22	...	22	1	
"	Victoria—Andrew and Whitford.....	1904-05	11½	...	11½	2	
"	Qu'Appelle—Lipton (loop).....	1906	11	...	11	1	
"	Saddle Lake—Industrial School.....	1900	6½	...	6½	1	
"	Kamsco—Indian Agency.....	1907	6½	...	6½	1	
British Columbia	Victoria—Cape Beale.....	1891	118	...	118	6	1,896
"	Nanaimo—Comox.....	1893	81	...	81	10	
"	Parksville—Alberni.....	1895	29½	...	86½	2	13,665
"	Alberni—Cape Beale.....	1899	57	...	57	...	
	Carried forward.....		3,939½	256½	4,217½	282	80,580

## SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—*Concluded.*

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Messages Sent.
			Land Lines.	Cables.	*Total.		
			Miles.	Kt's.			
	Brought forward.....		3,959½	256½	4,217½	282	80,580
British Columbia	Alberni—Clayoquot.....	1902	96½		96½	9	1,448
"	Kamloops—Lower Nicola.....	1899	67		67	32	24,000
"	Lower Nicola—Penticton.....	1905	168		168		
"	Vernon—Kilowna.....	1905	35		35	4	1,126
"	Kilowna—Penticton.....	1906	45	1½	46½		
"	Golden—Windermere.....	1901-02	92		92	5	684
"	Duncan Sta.—Salt Spring Isl. & Extens.	1902-04	24	¾	24¾		
"	Vernon—Lumley.....	1907	18		18	1	
Yukon.....	Ashcroft—Dawson and Boundary.....	1899-01	1845			68	41,811
"	Hazelton—Port Simpson and Aberdeen.....	1901-02	202½				
"	Tagish—Cariboo Crossing.....	1901	18			2,252½	
"	150 mile Sta.—Quesnelle Forks.....	1902	64				
"	Ashcroft—Lillooet.....	1896	62			215	
"	Quesnelle—Barkerville.....	1887	61				
"	Ashcroft—Quesnelle (local wire).....	1878-87	215				
	Total.....		6,973½	259	7,232½	401	149,649

\*For convenience in totalling, the knots of cable are regarded as statute miles.

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## REPORT ON THE GOVERNMENT TELEGRAPH SERVICE, 1908-9.

## EXPLANATORY NOTES.

The tabular statement prefacing this report shows the total mileage, &c., of the telegraph lines operated by the government. Lines that have been subsidized or constructed and transferred by the government for operation by private companies are not included in this list.

The matter in the following pages comprises a statement of specific actions taken in the course of the year; and as a new departure the particulars are given in separate reports hereto subjoined, that have been obtained, where practicable, from the district superintendents, and will be found indicated under the several division headings. In any case where no particular reference is made to a line found in the above-mentioned list, the understanding intended to be conveyed is that the line has been satisfactorily operated throughout the year, without any change of conditions since last made mention of in the annual report.

## NEWFOUNDLAND.

The line from Port au Basque to Cape Ray continued to be operated as heretofore, under an arrangement with the Anglo-American Telegraph Company.

## MARITIME PROVINCES.

*Cape Breton.*—Under an appropriation for the purpose, there was in the autumn of 1908 an extension made of the Eskasoni branch line, a distance of 16 miles to Grand Narrows, and arrangements are in hand for the establishment of several offices in that locality.

The Grand River branch line to Enon, was last autumn extended a further 12 miles towards Victoria bridge and will in the course of the present season be completed to Cabarous in pursuance of the intention mentioned in the last annual report.

Some general overhauling and resetting of poles was done in the season of 1908 on the Port Hawkesbury-Grand River and North Sydney-Scatarie sections.

The Scatarie cable was interrupted from April 13, 1908, and put again in operation on June 27. This cable had been subjected to damage by ice in the spring of every year since it was laid and as the result of local observations a change of its location was decided upon, and on this occasion of repair the landing places were shifted further to the eastward on the mainland and likewise on the island. The length of the cable now connecting the island is 3.34 knots (including .25 knot of shore end type at each of the shores) in place of the 1.75 knots previously employed.

Under an agreement with the Eastern Telephone Company, providing for joint ownership, a single line of poles to carry our respective wires has been erected through the town of North Sydney and along to Little Bras d'Or. The old poles had fallen into decay and there was some local objection to a needless duplication in the renewal.

A record of new offices opened, &c., will be found in the appended report (No. 1) from the district superintendent, Mr. D. C. Dawson.

*St. Pauls Island.*—The St. Pauls cable was interrupted on January 7, 1908, and repaired and put in good working order again by the ss. *Tyrian* on June 13. It was found to have been crushed by ice near both shores, and was also broken in deep water about midway between the island and the mainland.

## SESSIONAL PAPER No. 19

*Bay of Fundy.*—As a measure of assistance to a local telephone company recently established on Grand Manan, permission was given under the usual conditions for the use of the government telegraph poles for the suspension of their wires along the routes where a double line of poles would otherwise have been called for.

On August 27, 1908, the telegraph cable between Eastport and Campobello became inoperative and had to be attended to by the repair ship. The *Tyrian* was at the time available at Halifax and was at once sent round. The cable was repaired on the 9th of the following month. The rest of the system was kept in good order throughout the year. See report (No. 2) from the district superintendent, Mrs. C. C. Seely.

## QUEBEC.

*Magdalen Islands.*—The appended report (No. 3) from the district superintendent, Mr. A. Le Bourdais, covers the local conditions and operation of the land line sections throughout the year.

*Anticosti Island.*—See report (No. 4) from the district superintendent, Mr. A. Malouin, hereto annexed.

*North Shore St. Lawrence and Chicoutimi.*—The working conditions as set forth in last year's report, have continued satisfactory and undisturbed. A further extension of the Chicoutimi-St. Charles branch and some general repairs to roadways and bridges, necessary to the upkeep of the telegraph line in several sections of the Chicoutimi district, will be found dealt with in the annexed report (No. 5) from the district superintendent, Mr. J. C. Taché.

Along the North Shore, east of Bersimis, to the Straits of Belle Isle, the line has been maintained in satisfactory order. Repair gangs under the foremanship of the regular lineman in the several sections, performed, as has been customary each year, whatever work in the way of general overhauling and clearance of the line and the renewal of bridges, shelter huts, &c., that was called for in the several sections.

Changes and appointments, where any have been made, will be found noted in the tabular statement of offices, agencies, &c., in the appendix.

*Quarantine System.*—Throughout the season of navigation of 1908, after repairs to the cables were made in May and June, as noted in last year's report, the quarantine system of land lines and cables continued in good working order. In the course of the past winter there was trouble again from the ice in the river; the cable between Crane island and Montmagny was broken in December, and on an attempt being made to repair that section, it was found that about two miles of its length had been cut off near the shore and carried down the river. There being no spare cable immediately available, the restoration of this connection has been indefinitely postponed. The alternative connection via Grosse Isle is, however, in good working order and ought to satisfactorily meet all requirements. Some damage was also sustained by the stretches between St. François and Ile aux Reaux, March 12, 1909, and between Ange Gardien and St. Pierre, March 22, 1909. These two cables were again put in order in May by the local superintendent, Mr. J. P. Pouliot, whose report (No. 6), hereto appended, will be found to contain an account of the operating conditions, &c., in his district in the course of the year.

## ONTARIO.

*Pele Island Telephone System.*—The appended report (No. 7) from Mr. J. McR. Selkirk, district superintendent at Leamington, will be found to contain, barring the period of interruption, a satisfactory showing as to the maintenance and operation of the system during the year.

## NORTHWEST, BRITISH COLUMBIA AND THE YUKON.

The separate reports (Nos. 8-12), appended hereto, from the respective district superintendents, will be found to convey an account of what has been done in these

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divisions of the service in the course of the fiscal year. The whole, as was the case for the previous twelve months, affords a very satisfactory showing.

## TELEGRAPH SERVICE GENERALLY.

*Cable Ship 'Tyrian.'*—As mentioned elsewhere, the ss. *Tyrian*, in the course of the season of 1908, made repairs on the Gaspé-Anticosti cable and on the stretch between Bay St. Lawrence and St. Pauls island, and renewed the connection with Scatarie. The appended report (No. 13), from Mr. A. B. McDonald, electrician, conveys a statement of the lengths of cable handled. To meet further requirements in the way of repairs, &c., it is had in view to pick up as early as convenient the now disused length between Chateau bay and Belle isle, 20 knots, which has been superseded by the wireless stations of the Department of Marine and Fisheries.

*Telegraph Systems of the Dominion.*—As a matter of general interest, pursuant to the statement submitted last year, the latest figures to hand showing the extent of telegraph lines in operation in the Dominion are given hereunder:—

Canada.	LENGTH OF LINES IN MILES.			LENGTH OF CONDUCTORS IN MILES.			Number of Offices.
	Aerial.	Under- ground.	Total.	Aerial.	Under- ground.	Total.	
Great North Western Telegraph Co.	11,775	.....	11,775	48,652	.....	48,652	1,360
Canadian Pacific Telegraph. . .	10,292	2	10,294	50,952	57	51,009	1,150
Western Union Telegraph Co. . .	2,610	28	2,638	9,805	44	9,849	219
Government Telegraph service. .	6,974	.....	6,974	6,974	.....	6,974	401

## REVENUE AND EXPENDITURE.

The revenue and expenditure for each of the government lines in the several districts hereinbefore mentioned, are given in the following table:—

1908-09.	Expenditure.	Revenue.	Remarks.
	\$ cts.	\$ cts.	
Lower St. Lawrence and Maritime Provinces :—			
Anticosti lines. . . . .	5,514 78	1,182 19	
Bay of Fundy . . . . .	2,299 77	899 41	
Gaspé Local. . . . .	.....	29 28	
Escuminac. . . . .	682 96	194 96	
Magdalen Islands. . . . .	4,631 89	1,215 69	
Father Point Agency . . . . .	590 60	.....	
Cape Breton lines. . . . .	15,244 07	3,324 92	
North Shore (E. B.) . . . . .	29,073 40	5,546 62	
" (W. B.) . . . . .	12,642 08	2,640 90	
Quarantine system . . . . .	6,302 97	551 12	
Cable ship <i>Tyrian</i> :—			
Maintenance and repairs. . . . .	46,623 21	.....	
Subsidies, stationery, line and office material and contingencies. . . . .	14,303 78	.....	
Gulf general. . . . .	.....	.....	
Ontario :—			
Pelée Island line. . . . .	118 75	247 45	
Northwest Territories lines . . . . .	31,977 21	5,805 21	
British Columbia :—			
Alberni-Cape Beale. . . . .	2,056 90	131 79	
Alberni-Clayoquot. . . . .	4,494 61	441 46	
Golden-Windermere . . . . .	3,932 51	969 36	
Kamloops-Nicola, Penticton. . . . .	11,222 78	9,137 40	
Vernon-Kelowna. . . . .	.....	.....	
Nanaimo-Comox. . . . .	7,085 71	3,103 84	
Vancouver-Salt Spring. . . . .	1,262 45	399 19	
Victoria-Cape Beale . . . . .	10,697 55	549 42	
B. C. service generally. . . . .	4,291 34	.....	
Yukon :—			
Ashcroft-Dawson. . . . .	215,110 05	76,805 13	
Telegraph service generally . . . . .	4,876 41	.....	
Total . . . . .	434,845 18	113,175 34	Signal Service messages, Meteorological Service messages and reports, and Fisheries bulletins are handled free of tolls.

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## DEPARTMENTAL TELEPHONE SERVICE.

Up to date of this report (June 18, 1909), the telephone connections with the central offices of the Bell Telephone Company at Ottawa, listed as chargeable to the special appropriation, numbered 411, the annual charge for which amounts to \$16,846.25. The connections are distributed amongst the several departments, as hereunder:—

Department.	Offices.	Residences.	Annual charge.
			\$ cts.
Agriculture .....	11	5	630 00
Auditor general.....	10	1	480 00
Census Department.....	1	1	85 00
Customs Department.....	8	3	445 00
Dominion Police.....	10	3	523 00
Exchequer Court.....	1	1	100 00
Finance Department.....	7	3	405 00
Governor General (including Priv. System).....	7	3	462 75
Geological Survey .....	7	2	335 00
House of Commons.....	15	3	782 50
Indian Affairs.....	6	2	320 00
Inland Revenue.....	6	3	370 00
Interior Department.....	46	6	2,105 00
Justice Department.....	8	10	693 00
Labour Department.....	1	3	155 00
Mounted Police.....	3	1	145 00
Marine Department.....	18	7	993 00
Militia and Defence.....	27	14	1,735 00
Parliamentary Library.....	1	2	120 00
Post Office Department.....	10	6	630 00
Privy Council.....	6	6	485 00
Public Works Department.....	40	15	2,361 00
Railways and Canals.....	10	10	775 00
Royal Mint.....	1		40 00
Secretary of State.....	7	5	463 00
Stationery and Printing.....	9	5	595 00
Trade and Commerce.....	5	3	325 00
The Senate.....	6	1	268 00
	287	124	16,840 25

## APPENDED TABLES.

The usual tabular statements of the lines and offices, staff, &c., of the telegraph service, following hereupon, will be found to contain whatever additions or changes have been made up to March 31, 1909.

D. H. KEELEY,

*General Superintendent.*

OTTAWA, June 18, 1909.

## DOMINION TELEGRAPH SERVICE.

## NEWFOUNDLAND TELEGRAPH SERVICE.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Memo
		Miles.	\$ c.	
1	Port au Basques.....	0	50 00 or commission.	N.B.—The commission is 25 per cent upon all business to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum.
2	Cap Ray Lighthouse.....	14	50 00 "	
	Totals.....	14	100 00	

N.B.—The above short line is constructed in connection with the Signal Service, and connects at Port au Basque with the land line system of the Anglo-American Telegraph Company.

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## GOVERNMENT TELEGRAPH SERVICE.

## NOVA SCOTIA TELEGRAPH SYSTEM.

## CAPE SABLE SECTION.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		\$	cts.	
1	Barrington.	0				
2	Newelton (including 1½ knots cable)	11				
3	Cape Sable Island light-house (including ¾ mile cable)	6½				
	Totals.	17½				This line has been leased to the Barrington Telephone Company from August 12, 1897. The lease is terminable at any time.

## EAST COAST SECTION.

N. B.—In connection with the Signal Service a land line, 208 miles in length, was erected in 1881, between Canso and Halifax, for a bonus of \$16,000, and is maintained and operated by the Western Union Telegraph Company, without further cost to the Government.



## SESSIONAL PAPER No. 19

## GOVERNMENT TELEGRAPH SERVICE.

## CAPE BRETON SECTION.

## MEAT COVE TO SCATARIE ISLAND (EASTERN LIGHT) WITH BRANCHES.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
1	Meat Cove*.....	0	See Meat Cove, North Sydney Section.			
2	Cape St. Lawrence .....	4	Mrs. C. Jamieson.....	50 00 per annum.....	Jan. 1, 1904	
3	Pleasant Bay.....	15	Mrs. G. F. McIntosh.....	50 00 ".....	Sept. 1, 1907	
4	Cheticamp.....	27	Chas. J. Au Coin.....	50 00 ".....	Aug. 3, 1905	
5	Grand Etang.....	8	G. Doucet.....	50 00 ".....	Sept. 13, 1902	
6	Northeast Margaree (loop line wire.....	8	Mrs. J. D. Ross.....	50 00 or commission.....	Feb. 1, 1898	
7	Margaree Harbour.....	10	A. B. C. McLean.....	50 00 p.c. R. & Cks.....	Oct. 20, 1896	
8	Margaree Forks.....	3	Sarah McDougall.....	50 00 per annum.....	Sept. 10, 1908	
9	Southwest Margaree.....	2	D. D. McFarlane.....	50 00 ".....	Feb. 1, 1898	
10	Inverness Town (Broad Cove).....	12	Annie Smith.....	50 00 ".....	Aug. 1, 1908	
11	Strathlorne.....	11	Catherine McLean.....	50 00 or commission.....	Nov. 1, 1908	
12	Mabou.....	9	Mrs. M. McDonald.....	120 00 per annum.....	April 1, 1887	
13	Port Hood.....	10	D. J. McDonald.....	50 00* ".....	July 1, 1903	
14	Port Hood Id. (Smiths Id.) cable.....	4½	Elsie M. Smith.....	50 00 ".....	Nov. 1, 1907	
15	Outer Island (Henry Id.) cable.....	4	Cassie McLennan.....	50 00 ".....	Nov. 8, 1907	
16	Judique.....	10	E. McDonald.....	50 00 ".....	Nov. 1, 1903	
17	Craigsmish (Craigmore).....	8	Allan Cameron.....	50 00 ".....	Nov. 1, 1903	
18	Port Hastings.....	10	Miss M. McFarlane.....	50 00 ".....	" 1, 1903	
19	Port Hawkesbury.....	32	Miss E. McDonald.....	120 00 ".....	" 1, 1903	
20	River Bourgeois.....	26	M. E. Boyd.....	50 00 ".....	" 1, 1903	
21	St. Peters.....	6	R. C. Morrison.....	100 00 ".....	June 22, 1905	
22	Lower Lardoise (¾ mile loop).....	7	Miss Mary M. Finlayson.....	50 00 ".....	" 1, 1903	
23	Grand River.....	8	Miss E. A. Finlayson.....	50 00 ".....	Dec. 20, 1907	
24	Grand River Falls.....	19½	Mrs. E. D. McKillop.....	50 00 ".....	" 14, 1907	
25	Loch Lomond.....	19½	Mrs. J. McK. Fraser.....	50 00 ".....	May 13, 1908	
26	Enon.....		Effie McDonald.....	50 00 ".....		
27	St. Esprit (Laframboise Interval).....	13	Mrs. J. D. Morrison.....	50 00 ".....	Sept. 1, 1906	
28	Fouches (Fouchie).....	13	Miss Ida F. Cann.....	50 00 ".....	March 25, 1907	
29	Galarious (3 mile loop).....	16	Miss C. Grant.....	300 00 ".....	Jan. 16, 1904	
30	Louisbourg.....	14	Wesley Townsend.....	50 00 ".....	Feb. 1, 1904	

The commission is 25 p.c. of the Government line tolls, and is guaranteed to amount to not less than \$50 per annum. Where 50 p.c. commission is paid there is no guarantee as to amount.

Main battery at St. Peters.

Repeating office.

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## GOVERNMENT TELEGRAPH SERVICE—Continued.

## CAPE BRETON SECTION—Continued.

## MEAT COVE TO SCATARIE ISLAND (EASTERN LIGHT) WITH BRANCHES—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
31	Main à Dieu To cable landing.....14 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>2</sub> 2	Hattie Dickson.....	50 00 per annum	Oct. 1, 1908	\$50 additional to Main à Dieu agency for care of main battery.
32	Cable across channel.....14 <sup>1</sup> / <sub>2</sub>					
32	Scatarie Island (Western Light).....		E. F. Pope.....	50 00 "	Aug. 15, 1904	
33	Scatarie Island (Eastern Light).....	74	J. T. Martel.....	50 00 "	" 1, 1904	
34	St. Pauls Island.....	3	S. C. Campbell.....	50 00 "	Oct. 1, 1890	Land wire across the Island, Atlantic Cove to Trinity Cove.
		317 <sup>1</sup> / <sub>2</sub>		2,150 00		

\* Meat Cove station connects with the Magdalen Islands system by a cable to Old Harry Head, 55 knots, and with St. Pauls Island by a cable of 20 knots. The latter is operated with telephones.

\*\* Branch from Port Hood.

## MEAT COVE TO NORTH SYDNEY AND GABAROUS WITH BRANCHES.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
				\$ cts.		
0	Meat Cove.....	0	Mrs. H. L. McEachern.....	50 00 or commission	Sept. 1, 1907.	
1	Bay St. Lawrence, includ- ing connections to cables.....	14	{ V. Theriault Mde V. Theriault	720 00 420 00	May 1, 1902	Cable station at Bay St. Lawrence in place of Meat Cove since September 1, 1906. The commission is 25 p c. on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$50 per annum.
2	Aspy Bay.....	5	L. V. Nichols.....	50 00 or commission	July 1, 1894	
3	Dingwell (loop line).....	34 24 <sup>1</sup> / <sub>2</sub>	{ Joe O'Brien	50 00 "	Nov. 1, 1907	
4	Cape North (Inland)	3	N. A. McDonald.....	50 00 "	May 13, 1904	
5	Nells Harbour (half-way house loop line).....	10 14 <sup>1</sup> / <sub>2</sub>	{ M. McLeod	50 00 "	April 1, 1887	
6	Ingonish, North Bay (4 knot cable).....	82	Mrs. S. S. Burke.....	50 00 "	June 1, 1884.	

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7	South Ingonish.....	10	Geo. Brewer.....	50 00	May 7, 1899
8	Ingonish Ferry.....	2	Anna McLeod.....	50 00	Oct. 1, 1903
9	Wreck Cove.....	7	Miss Mary Morrison.....	50 00	May 18, 1908
10	French Riv. (½ knot cable).....	14	John McDonald.....	50 00	April 1, 1899
11	Breton Cove.....	2	D. B. McLeod.....	25 p. c.	July 19, 1907
12	Indian Brook.....	3	Sadie McDonald.....	50 00	Feb. 1, 1907
13	Murray (loop line).....	12	K. B. Matheson.....	50 00	Jan. 29, 1902
14	Englishtown (½ knot cable) Cable across St. Ann's Isle (½ knot).....	63	W. Bingham.....	120 00 and commiss., and 25 p. c. R.	
15	South Gut, St. Ann's (on loop).....	5	Rachael Morrison.....	50 00 or commission	July 19, 1892
16	Baddeck (on loop).....	13	L. M. Anderson.....	100 00 and 25 p. c. R. & Cks.	Sept. 1, 1904
1	Englishtown (back on loop)	17			June 17, 1904
17	Kelley's Cove, N. Campbell- ton.....	6	J. S. Burchell.....	50 00 or commission	July 7, 1904
18	Big Bras d'Or (½ knot cable)	24	D. Livingston.....	100 00	Jan. 1, 1899
19	Boullarderie Centre.....	63	Mrs. J. R. McKenzie.....	50 00	" 6, 1904
20	Rosa Ferry.....	7	Robert Campbell.....	50 00	" 6, 1904
21	Upper Keup's Head.....	4	Mrs. Murdoch McKenzie.....	50 00	Oct. 6, 1904
22	Point Clear.....	3	Mrs. M. McLeod.....	50 00	Dec. 1, 1906
23	S. S. Boullarderie.....	4	Donald McRae.....	50 00	Jan. 1, 1907
24	Boullarderie West.....	4	John McIntyre.....	50 00	Jan. 1, 1907
25	Hillside.....	4	Mrs. Christina McKenzie.....	50 00	Feb. 1, 1907
26	Groves Point (1 mi. M. C. poles).....	3	Mrs. Mary Dunlop.....	50 00	" 1, 1906
27	Alder Point (loop line). <sup>*</sup>	6	Mrs. John Arsenault.....	50 00	" 1, 1906
28	Little Bras d'Or (M.C. poles).....	5	Miss D. Edna Grantmeyer.....	50 00	Dec. 1, 1906
North Sydney—Little Bras d'Or (2nd wire).....		6			
North Sydney.....		64	W. U. Tel. Co.....	Commission only	
Gabaroua.....		353			
North Sydney.....					
29	French Vale.....	11	John J. McLean.....	50 00	Mar. 25, 1907
30	Gill's Lake.....	5	Daniel H. Gillis.....	50 00	Feb. 28, 1907
31	East Bay.....	4	Miss M. L. McNeil.....	50 00	"
32	North Side East Bay.....	6	James J. Gillis.....	50 00	Jan. 15, 1907
33	Edkasont.....	5	Sadie McMillan.....	50 00	Dec. 6, 1907
34	Castle Bay.....	6	Miss Maria McDonald.....	50 00	Jan. 10, 1907
35	Graud Narrows.....	16	Daniel McNeil.....	50 00	May 27, 1909
Totals.....		369		3,010 00	

<sup>\*</sup> Branch to Upper Keup's Head.<sup>†</sup> North Sydney—Edkasont Branch.

The commission is 25 p. c. of the Govt. line tolls in each instance, and is guaranteed to amount to not less than \$50 per annum.

The commission is 50 p. c. on local business and 25 p. c. on through messages; and covers supervision of line and office accommodation at North Sydney.

Switching point for Baddeck line.

Salary. \$120 per year previous to this appointment. Former Agent, Mr. A. Anderson. This loop to Baddeck starts from and returns to Englishtown.

Increase from \$50 to \$100 since November 1, 1904.

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## GOVERNMENT TELEGRAPH SERVICE—Continued.

## CAPE BRETON SECTION—Continued.

## MEAT COVE TO NORTH SYDNEY AND GABAROUS WITH BRANCHES—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo
	<i>Repairers Stations.</i>	Miles.		\$ cts.		
	Meat Cove — Half-way	5	R. Fraser	40 00 or commission	May 20, 1903.	
	Shanty.....	5	E. Fraser	"	"	
	Half-way Shanty — Poullets	5	E. Fraser	30 00	"	
	Cove.....	10	K. Fraser	40 00	"	
	Poullets Cove—Pleasant Bay	15	E. J. Timmons	40 00	Mar. 16, 1903.	
	Pleasant Bay—Barren	11	J. A. Chaisson	40 00	July 1, 1905.	
	Barren—Cheticamp	8	Joseph L. Chaisson	40 00	"	
	Cheticamp—Grand Etang	18	H. K. McLean	25 00	"	
	Grand Etang—Margaree	8	Alex. McFarlane, sr.	40 00	"	
	Margaree H. — S. W. Mar-	18	J. D. McFarlane	40 00	June 4, 1902	
	garree.....	11	L. G. McDougall	"	Nov. 3, 1902.	
	Strathlorne—Mabou.....	20	J. A. Campbell	40 00 per annum.	Aug. 1, 1904.	
	Mabou and Judique.....	21	J. N. McIsaac	50 00 }		
	Judique and Port Hawkes-	6	Captain John Arsenault	50 00		
	bury.....	36	J. A. C. McKenzie	50 00		
	Alder Point — Little Bras	36	R. R. McKenzie	50 00		
	d'Or.....	15	Angus J. McLean	50 00		
	Big Bras d'Or — Upper	15	Duncan Gillis	50 00		
	Kempt Head.....	14	John Smith	25 00		
	Little Bras d'Or — Upper	17	Dan Campbell	100 00		
	Kempt Head.....	17	D. McAulay	60 00		
	North Sydney—Gillis Lake	36	R. A. McDonald	100 00		
	Gillis Lake—Eskanami	30	Charles Smith	100 00		
	Murray—Indian Brook.....	12	M. McAskill	80 00		
	English town — Fiddleck					
	Ingonish—English town					
	Sugar Loaf—Ingonish					
	Meat Cove—Sugar Loaf					
	<i>General Repairers.</i>					
	Meat Cove—Hawkesbury	156	V. A. McLellan	420 00 per annum	Mar. 1, 1905	
	Port Hawkesbury — Gab-	96	G. E. Bissett	420 00	Aug. 1, 1904.	

Appointments date from June 1, 1907.

Increase from \$80 since June 1, 1903.

Salary covers horse-hire, &amp;c.

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North Sydney—Sctario	86½	E. M. Dickson.	540 00	"	1, 1907.
Eskaoni—Boularderie	106	Joseph Logue.	540 00		
Branch	182	S. S. Burke.	420 00	April 1, 1904.	Payment includes horse-hire.
Big Bras d'Or Meat Cove					
District Superintendent.					
St. John, N. B.		D. C. Dawson.	720 00	Jan. 1, 1887.	
Totals	626½		4,250 00		

## CHATHAM-ESCUMINAC, N. B., TELEGRAPH SYSTEM.

1 Chatham	0	Great Northwestern Telegraph Co.	185 00			This amount is paid for supervision of the line and office accommodation at Chatham.
2 Black Brook	5½	M. McDougall	50 00 or commission.	July 1, 1904		The commission is 25 p.c. of the Government line tariff receipts in each instance, and is guaranteed to amount to not less than \$50 per annum.
3 Baie du Vin	15	Mrs. M. Williston	50 00	Mar. 1, 1885.		
4 Lower Hardwicke	6	Mrs. M. Brammer	50 00	Aug. 1, 1891		
5 Escuminac	3½	D. Lewis	50 00	Sept. 1, 1885.		
6 Point Escuminac lighthouse	12	K. R. McLennan.	50 00	Nov. 1, 1893.		\$12 per annum allowed for care of main battery at Point Escuminac.
Totals	42½		435 00			

## BAY OF FUNDY, N.B., TELEGRAPH SYSTEM.

## GRAND MANAN SECTION.

1 Long Eddy Cable Hat to.						
1 Flagg's Cove	3	Mrs. C. C. Sedy (D.S.)	540 00	Nov. 18, 1880		*The commission is 25 p.c. on all business to and from the office in each instance; and commission guaranteed not to be less than at the rate of \$50 per annum. When 50 p.c. commission is paid there is no guarantee as to amount.
"		Miss V. A. McFarlane	50 00 or commission.	Oct. 1, 1903		
"		A. Gilmore, repairer.	60 00	Dec. 1, 1894		
2 Cuctalia	2½	G. E. Dalzell	Commission 25 p.c.	June 1, 1898		
3 Woodwards Cove	3½	W. A. Fraser	" 50 p.c.	Feb. 28, 1893		
4 Grand Harbour	2	J. L. Newton	75 00 or commission.	April 1, 1887		\$25 per annum is included for repeating Whitehead branch.
5 Seal Cove	4½	J. A. Ingersoll	50 00	Sept. 22, 1899		
6 "	4½	Mrs. Robert Fraser.	25 00	Aug. 1, 1907		
7 Southern Head Lighthouse.	5½	C. Ingersoll.	Commission 25 p.c.	April 22, 1897		Southern Head office is now operated by telephone from Seal Cove.
Branch Line.						
8 Grand Harbour.	0					
Cheneys Island, (½ knot cable)	4½	S. E. Russell	" 25 p.c.	Feb. 1, 1891.		

## GOVERNMENT TELEGRAPH SERVICE—Continued.

## BAY OF FUNDY, N.B., TELEGRAPH SYSTEM—Continued.

## GRAND MANAN SECTION—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
	<i>Branch Line—Con.</i>	Miles.		\$ c.		
9	Whitehead Island ( $\frac{3}{4}$ knot cable).....	1 $\frac{1}{2}$	Mrs. W. Cassaboom.	50 00 or commission.	Feb. 1, 1903.	
	Cable, Long Eddy to Liberty Cove.....	7 $\frac{1}{4}$				
	<i>Liberty Cove Cable Hut to.</i>					
10	Welchpool.....	7 $\frac{1}{2}$	Wellington Parker, Lieutenant.....	2 00 per day		Employed occasionally.
	Cable across channel.....	1 $\frac{1}{2}$	G. E. Mitchell.....	210 00 and commission.	May 1, 1905.	
11	Eastport, Maine, U.S.A.....	$\frac{1}{2}$	J. Cushing.....	200 00	Dec 26, 1881.	
	Totals.....	44 $\frac{1}{2}$		1,635 00		

## MAGDALEN ISLANDS SYSTEM.

## MAGDALEN ISLANDS SECTION.

1	Amherst.....	0	Miss J. Shea.....	50 00 or commission.	Oct. 1, 1882.	The commission is 25 per cent on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$50 per annum.
2	Amherst Lighthouse.....	9	Wm. Repeau.....	120 00	June 9, 1908.	Plus \$1 per day when absent on duty.
3	Etang du Nord village.....	15	Wm. Cormier.....	50 00	June 11, 1881.	Two wire loop line.
4	Etang du Nord Lighthouse.....	1	J.G. Binet, gen. repairer.....	500 00	Dec. 1, 1900.	Plus \$1 per day when absent on duty. The salary was \$720 per annum prior to July 1, 1908.
5	Grindstone Island.....	1	Mrs. A. Binet.....	100 00	" 1, 1881.	Temporary assistant.
6	Grindstone West.....	5	N. Arseneault.....	50 00	Sept. 1, 1891.	
			W. Leslie.....	Commission 25 p.c.	May 26, 1897.	
			A. LeBourdais, disapt.....	900 00	Aug. 17, 1880.	
			Mrs. LeBourdais, oper.....	50 00	Sept. 15, 1893.	
			J. J. LeBourdais.....	37 00 per month.	May 25, 1904.	
7	Horse Harbour ( $\frac{1}{2}$ knot cable)*.....	3	Camille Delaney.....	50 00 or commission.	June 1, 1903.	
8	Wolfe Island.....	28 $\frac{1}{2}$	N. Clark.....	260 00 or commission.	June 1, 1888.	For repeating station. Prior to Dec. 1, '02, the allowance was \$200 and commission for local agency.
9	Grosse Isle.....	11	J. Quinn.....	180 00	Dec. 1, 1902.	

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GOVERNMENT TELEGRAPH SERVICE—Continued.  
CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM.

CHICOUTIMI SECTION.

No.	Stations.	Inter- mediate Distance	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
1	Bay St. Paul		F. Boivin.	360 00 per annum†	April 1, 1885.	*The commission on business is 25 per cent of the Government tolls of the line; the amount guaranteed to be not less than \$50 per annum.  Salary increased to \$150 per annum, June 1, 1907. Plus \$25 per year for operating branch line to L'Anse St. Jean. J. Fortin's division includes the branch line to L'Anse St. Jean.  †Salary increased to \$360 per annum, June 1, 1907.
2	St. Urbain	9	(A. Boivin (Michel Fortin, rep'nt)	25 p.c. commission 50 00 or commission 270 00 per annum	" 1, 1885.	
3	La Gaiette	37	S. Onelle.	150 00 or commission	Aug. 25, 1902	
4	Ferland	27½	B. Lavoie	50 00 "	Mar. 1, 1905	
5	St. Alexis	10	Mrs. D. Simard	75 00 "	Nov. 1, 1889	
6	St. Alphonse de Bagotville.	8	Mrs. C. Levesque.	150 00 per annum	June 1, 1906.	
7	Chicoutimi	11½				
	Branch Line.	98		1,105 00		
8	St. Alexis.	0	Mrs. D. Simard.	75 00	Nov. 1, 1905	
9	St. Felix d'Ottis	10	P. V. Lavoie	50 00	" 1, 1907.	
10	L'Anse St. Jean.	30	Eria Degagné, rep'nt.	350 00		(This office had been closed since April 30, 1904.)
11	Petite Saguenay	8	M. Tremblay	50 00	Sept. 1, 1903	
12	Anse Cheval	6	Jos. Degagné	50 00	Feb. 1, 1905	
	St. Etienne.	7				
	St. Catherine Bay	17	G. Boulianne (see North Shore W. B. Line).			
		78		575 00		
	Totals.	176		1,680 00		



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## MURRAY BAY-ST. AGNES SECTION.

1	Murray Bay	0	Mrs. F. Vincent.	50 00	(See Murray Bay, Percinis section.)
2	St. Agnes.	7½	Jos. Gaudreau.	50 00	Jan. 1, 1904
	Trinity (Guay)	7	Jos. Demetres.	50 00	May 1, 1906
		14½		100 00	
1	Bay St. Paul.	0	F. Boivin	50 00	(See Bay St. Paul, Chicoutimi section.)
	Petite River	13	Les Bouchard.	50 00	(Payment at Bay St. Paul \$25 per year and \$12 for battery care, for operation of this branch to Petite River.
		13		50 00	

Connections for these lines with the G. N. W. Telegraph System are made at Chicoutimi, Bay St. Paul and Murray Bay.

## CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM

Continued.

## CHICOUTIMI SECTION—Continued.

1	Tadoussac	0	Eugene Caron	Commission	
2	Sacré Cœur	12½	(H. Gravel, repairer.	360 00	
			(Miss L. Maltais.	50 00	
3	Ste. Marguerite.	8	(Mrs. P. Hervieux	50 00	
			(Elzéar Lavioie		
4	Prix Bros. & Co.	2	Company.	Accommodation.	
5	Descente des Femmes.	34	Aug. Villeneuve.	50 00	
6	Lac Laurent	9	S. Gagnon	50 00	
7	Ste. Fulgence.	8	G. H. Gagnon.	50 00	
8	Ste. Anne	8	P. Gauthier, repairer.		
9	Chicoutimi	1	D. Villeneuve.		
					Sept. 1908.
1	St. Anne	8	P. Gauthier, repairer.	360 00	
2	Shipshaw.	3	Miss M. Dufour	50 00	
3	Shipshaw, North.	6	J. Murdoch.	50 00	
4	St. Leonard	7	Géo. Gagnon	50 00	
5	St. Ambrose.	10	A. Simard	50 00	
6	St. Charles	9	B. Bouchard	50 00	
7	Tacque	7	Jean Fradette.	50 00	
8	St. Joseph d'Alma.	3	Elis Gagné.	50 00	
			Gédéon Verreault.	360 00	
9	St. Cœur de Marie.	5	Alfred Rousseau.	50 00	
10	St. Henri de Tallon.	6½			
11	Houleur	8	Charles Landry.	50 00	
12	La Pile	0	Hypolithe Boivin.	50 00	
13	Peribonka.	1	Mrs. E. Niquette.	50 00	
					Aug. 1, 1903
					Nov. " 1, 1907
					" 1, 1903
					Sept. 1, 1903
					June 1, 1905
					Sept. 1, 1903
					Jan. 1, 1908
					" 1, 1908
					Mar. 1, 1909
					Jan. 1, 1908
					Jan. " 1909
					" 1, 1908

Salary increased to \$500 per annum April 1, 1907.

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GOVERNMENT TELEGRAPH SERVICE.—Continued.  
CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM.—Continued.  
CHICOUTIMI SECTION.—Continued.

No.	Stations.	Inter- mediate Distances	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
	Chicoutimi . . . . .	3	J. C. Taché, Dis. Suply. D. Villeneuve, operator A. Simard, inspector T. Villeneuve, night op. J. A. Couët, clerk J. Gagné, messenger J. Fortin, repairer	200 00 600 00 564 00 480 00 180 00 120 00 420 00	Jan. 1, 1905. April 1, 1905 " 1, 1905 June 1, 1897.	
	Branch Line.	37		4,484 00		
1	St. Anne . . . . .	0	P. Gauthier . . . . .	50 00	Jan. 1, 1904 . . . . .	(See St. Charles—Chicoutimi section.)
	St. Fulgence . . . . .	0	Rev. Geo. Gagnon . . . . . John Brisson . . . . .	350 00		
		9		410 00		
	St. Anne . . . . .		P. Gauthier . . . . .	50 00	Feb. 1, 1904 . . . . .	
	Rang 9 . . . . .	3	Thos. Simard . . . . .	50 00	Nov. 1, 1905 . . . . .	
	Lac Charles . . . . .	3	A. Dufour . . . . .	50 00	" 1, 1904 . . . . .	
	Lac Clair . . . . .	9	L. Boulianne . . . . .	50 00	" 1, 1905 . . . . .	
		15		200 00		
NORTH SHORE (West of Berstini).						
1	Murray Bay . . . . .	0	Mrs. F. Vincent . . . . .	50 00 or commission.	April 1, 1885 . . . . .	Plus \$25 per year, and \$12 for battery care for operation of branch to Guay.
2	Cap à l'Aigle . . . . .	4	Miss S. Bergeron . . . . .	50 00	June 1, 1905 . . . . .	
3	St. Fidèle . . . . .	6	Jos. Desbiens . . . . .	50 00	Dec. 1, 1904 . . . . .	
4	Port au Persil . . . . .	7	J. A. Brassard, repairer . . . . .	50 00	May 1, 1889 . . . . .	
5	St. Siméon . . . . .	4	Johnny Tremblay . . . . .	360 00	June 1, 1887 . . . . .	
6	Baie des Rochers . . . . .	12	Mde D. G. Savard . . . . .	50 00	Aug. 1, 1907 . . . . .	
7	St. Catherine Bay . . . . .	18	J. G. Boulianne . . . . .	360 00	Nov. 1, 1886 . . . . .	
			Mde G. Boulianne . . . . .	240 00		
8	Tadoussac (1½ knot cable) . . . . .	1½	J. E. Caron . . . . . L. Maltais . . . . .	50 00 50 00	Nov. 1, 1888 . . . . . Dec. 6, 1901 . . . . .	

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9	Ben-Desir .....	10	Mde E. Gauthier .....	50 00	"	Aug. 1, 1904.	
10	Bergeron .....	5	Mde M. Savard .....	50 00	"	April, 1885.	
11	Escouman .....	12	J. H. Topping .....	50 00	"	" 6, 1885.	Commission at 25 per cent, without guarantee at Baie des Bacons.
12	Baie des Bacons .....	8	P. Bouchard .....	50 00	"	May 6, 1906.	
13	Sault au Monton .....	8	C. E. Nolet .....	50 00	or commission	Nov. 1, 1906.	
14	Sault au Monton .....	8	Mde L. Fuzé .....	50 00	"	Aug. 1, 1907.	
15	Ause Hamilton .....	11½	C. P. Easton .....	50 00	or commission	Sept. 1, 1903.	Accommodation office.
16	Pornouet, light .....	6	(Leandre Bouchard .....	420 00	"	April 1, 1888.	
17	Sault au Cochon .....	7	(A. Maloney, agent .....	550 00	or commission	Sept. 21, 1896.	Sault au Cochon closed September 30, 1896.
18	Bersimis .....	31	(Mrs. A. Maloney .....	180 00	"	July 1, 1906.	
			(E. Pope, Dist. Supt. .....	600 00	"	April, 1885.	
		15½		3,460 00			

\*NOTE. In the estimates, the maintenance of the Chicoutimi and North Shore line is provided under head of North Shore Line. They are operated conjointly.

## NORTH SHORE (East of Bersimis).

1	Bersimis .....	0*	{ H. Tremblay .....	50 00	or commission	Dec. 1, 1896.	
1	Pointe aux Outardes .....	29					
2	Des Parades .....	18					
2	Manicougan .....	14	W. Montreuil, line-man .....	420 00	per annum	Aug. —, 1901.	The repeating office formerly at Manicougan was removed to Bersimis in September, 1896.
	Miscasin .....	22	and operator .....				
3	River Godbout .....	26	N. A. Canessa .....	50 00	or commission	Oct. 15, 1885.	
4	Pointe des Monts .....	18½	L. F. Faffard .....	50 00	"	Dec. 28, 1883.	
5	Trinity Bay West .....	6½	Z. Poulin .....	50 00	"	May 16, 1884.	
6	Trinity Bay East .....	25	A. Bilodeau .....	25 p.c.	or commission	" 1, 1889.	
7	Carlton Islands .....	7	L. Comeau .....	"	"	Sept. 1, 1889.	
8	Pointe aux Anglais .....	10½	P. Paul Cote .....	Accommodation office.		Jan. 10, 1895.	No commission is paid at this office.
9	Pontecout .....	6½	P. Molloy .....	250 00	per annum	Sept. 17, 1905.	
10	Ste. Marguerite .....	47½	A. Theriault .....	180 00	per annum	July 1, 1888.	
11	Clark City .....	5	Accommodation office .....	25 p.c.	commission	April 17, 1903.	
			(P. E. Vignault .....	180 00	per annum	Jan. 2, 1884.	
12	Seven Islands .....	17½	(F. Gallienne, repr. .....	540 00	"	Nov. 5, 1906.	Plus 50 cents per day when absent on duty.
13	River Moisie .....	15½	(J. Poirier .....	50 00	or commission	June 1, 1896.	There is also an accommodation office in operation at Moisie in the fishing season.
14	Pigeon .....	28	(Mrs. Peter Wright, op .....	100 00	"	Oct. 1, 1902.	
15	Riviere aux Graines .....	29	(Miss H. Leberge .....	112 00	"	" 10, 1900.	
16	Sheldrake .....	15	Mrs. Alphonse Girard .....	50 00	"	Dec. 1, 1904.	
17	Thunder River .....	6½	Mrs. H. Cody .....	50 00	"	Feb. 1, 1890.	
18	Magpie .....	9	(Geo. Poirier .....	50 00	"		
19	St. John River .....	9	B. Chambers .....	50 00	"		
			(E. H. Tetu, dist. supt. .....	1,080 00	per annum	Oct. 1, 1889.	Long Point is the repeating office for the Anticosti cable in operation since September 1, 1891.
20	Long Point .....	10	(Mrs. E. H. Tetu, opr. .....	300 00	"	Nov. 1, 1903.	
			(A. Fournier, opr. .....	500 00	"	Sept. 11, 1906.	
			(Mrs. Fournier .....	116 00	"		
21	Mingan .....	7	E. Maloney .....	100 00	or commission		Salary increased to \$100 per annum, March 31, 1907.

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GOVERNMENT TELEGRAPH SERVICE—Continued  
CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM—Continued,  
NORTH SHORE (East of Bersimis) Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ c.		
22	Point Esquimaux .....	24	(Mrs. D. C. Hould .....	240 00 per annum .....	Sept. 1, 1907 .....	Allowance for office rent \$4 per month.
23	Bethoune .....	20	Edw. Cyr, insp'r. ....	500 00 " .....	Nov. 2, 1902 .....	Plus 50 cents per day when absent on duty.
24	Piastre Bay .....	23	Jos. Tizard, op. & rep. ....	212 00 " .....	July 13, 1904 .....	
25	Watichou .....	15	(S. Tangway, repr. ....	112 00 " .....	Sept. 18, 1902 .....	
26	Aguanus .....	21½	(Mrs. J. Boetz, opr. ....	100 00 " .....	Dec. 1, 1903 .....	This office was closed on withdrawal of former agent
27	Natastiquan .....	21	(Mrs. Cl. Bourque, opr. ....	100 00 " .....	Sept. 3, 1902 .....	from Sept. 4, 1903, \$12 rent to J. Boetz.
28	Kegaska .....	33	(John Bourque, repr. ....	112 00 " .....	" 5, 1902 .....	
29	Masquaro .....	18	(S. Galant, repr. ....	100 00 " .....	" 3, 1902 .....	
30	Romane .....	25	(C. Vignault, repr. ....	112 00 " .....	" 5, 1905 .....	
31	Wolf Bay .....	24	(Geo. Anderson, repr. ....	100 00 " .....	" 16, 1902 .....	
32	Ponte au Maurier .....	24	(J. L. Osborne, insp'r. ....	500 00 " .....	" 1, 1902 .....	
33	Harrington .....	29	(Wm. Foreman, op. & rep. ....	212 00 " .....	June 1, 1903 .....	
34	Whale Head .....	17	(M. Blais, repr. ....	112 00 " .....	Sept. 17, 1902 .....	
35	Mutton Bay .....	20	(Miss R. Blais, opr. ....	100 00 " .....	" 17, 1902 .....	
36	Bais-de-Ha .....	27	(Mrs. R. Jones, repr. ....	150 00 " .....	Nov. 26, 1902 .....	
37	St. Augustine .....	27	(J. Jones, repr. ....	100 00 " .....	Sept. 19, 1902 .....	
38	Chicatica Bay .....	24	(J. Galibois, repr. ....	112 00 " .....	Sept. 19, 1902 .....	
39	Rocky Bay .....	30	(Miss P. Gahbois .....	100 00 " .....	Sept. 20, 1902 .....	
40	Conne Esperance .....	21	(J. Jones, repr. ....	112 00 " .....	" 20, 1902 .....	
41	Brador Bay .....	29	(Nap. Nadeau, rep. & opr. ....	212 00 " .....	Jan. 21, 1903 .....	
			(Alf. Cormier, rep. & opr. ....	444 00 " .....	June 1, 1902 .....	
			(Mrs. J. Monger, opr. ....	100 00 " .....	" 14, 1904 .....	
			(G. W. Burgess, rep. & opr. ....	212 00 " .....	Sept. 25, 1902 .....	
			(Mlle. Esther Robin. ....	100 00 " .....	" .....	
			(George Robin. ....	112 00 " .....	" .....	
			(Miss B. E. Chevalier, o. ....	100 00 " .....	April 29, 1904 .....	
			(L. O. Chevalier, rep. ....	112 00 " .....	" 20, 1904 .....	
			(G. Chevalier, repr. ....	112 00 " .....	Oct. 2, 1902 .....	
			(Miss Chevalier, opr. ....	110 00 " .....	" 2, 1902 .....	
			(Johnny Jones, opr. ....	100 00 " .....	June 13, 1903 .....	
			(P. C. Vignault, insp'r. ....	500 00 " .....	Feb. 1, 1903 .....	Plus 50 cents when absent on duty.

	4	Thos. Morel, rep. & opr	212 00	Oct. 1, 1902.		
42 Blanc Sablon..	13	A. Hart, rep. & opt...	112 00	July 19, 1902.		
43 Forteau Bay...	17	Thos. Whyatt, rep. & op.	112 00	Feb. 17, 1903.		
44 Pointe-Amour...	16	Jas. Belger, rep. & opr	212 00	Oct. 5, 1902.		
45 West St. Modeste.	13	Gco. Moore, repr.	112 00	" 9, 1902.		
46 Red Bay...	13	Miss Moore, opr.	100 00	" 9, 1902.		
47 Chateau Bay...	30			Sept. 1, 1902.		
48 Belle Isle	23½	J. C. Colton, opr		Dec. 1, 1902.		
			360 00 per annum.	Nov. 1, 1903.		
Totals.	1067½		11,302 00	Sept. 14, 1902.		

} Closed Dec. 1, 1906.

Mileage.  
 33  
 34  
 17  
 67½  
 40  
 44  
 27  
 32½  
 19½  
 197½  
 202  
 199  
 1073½

**LINE REPAIRERS, SECTIONS AND MILEAGE MURRAY BAY TO CHATEAU BAY.**

	0	Great Northwestern Telegraph Co.	185 00			
Quebec.	13					
L'Ange Garden.						
Orleans Island (cable).						
St. Pierre.	4½	Marie Tureotte.	50 00 or commission.	Mar. 1, 1885.		
St. Petrouille.	3½	Desjardes Plante.	50 00	Oct. 1, 1886.		
St. Laurent.	6½	M. Gobeil.	120 00 and 25 per cent commission.	Sept. 15, 1888.		
St. Jean.	7	P. Pouliot.	1,120 00 and 25 per cent (commission)	Nov. 1, 1907.		
St. Francois.	6½	Hélène Lemelin.	50 00 or commission.	Oct. 1, 1907.		
Isle Rieux (including 2 knots cable).	3½					
Isle Rieux (land line).	2½					

} For local agency.  
 Dist. Sup. and repairer.

This amount is paid for supervision of the line, and covers rent of pole line from Quebec to L'Ange Gardet, for which \$85 per annum is charged.  
 This commission is 25 p. c. of the Government line tariff in each instance, and guaranteed to amount to not less than \$50 per annum.

**GROSSE ISLE QUARANTINE TELEGRAPH SYSTEM.**

GOVERNMENT TELEGRAPH SERVICE—Continued.  
GROSSE ISLE QUARANTINE TELEGRAPH SYSTEM—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
8	Grosse Isle quarantine office (including 2 knots cable).	3½	Miss Julia Leguée....	180 00 and 25 per cent commission.	June 1, 1906	\$4 per month for messenger serv. in summer, and \$12 p. annum allowed for care of main batt. at Gr. Isle. NOTE.—The telephone system on Grosse Isle since May, 1883, has comprised 1½ miles of 2 wire line with 11 connections or stations.
	Quarantine telephone sys- tem 2 wire line.....	1½				
	Totals .....	52½		1,675 00		
	Loop Line (2 wires).					
	St. François—St. François- Nord (looped wire) .....	5	Mrs. Irène Labbé.....	50 00 or commission	July 1, 1907	
	St. Jean-Sts. Famille .....	5½	P. Letourneau .....	50 00 or commission	April 2, 1904	
	St. François to Bay St. Paul (cable) .....	30		100 00		
	Crane Island to Montmagny (cable) .....	3½				
	Crane Island to Grosse Isle (cable) .....	5				

## ONTARIO—PELEE ISLAND TEL. SERVICE.

1	District Supt.'s house. ....	0	J. McR. Selkirk, dis. sup.	50 00 per annum	Nov. 1, 1888.	This is the connection that was formerly made with the club house nearby.
2	Leamington .....	0	"	Commission 20 p. c.	Nov. 2, 1904	
3	Bairds .....	1½	Accommodation office.		"	
	Leamington Dock (Lake Shore) .....	1	E. M. Delaurier, accom- modation office.		" 1, 1885.	
4	Bairds House .....	½	Alex. Baird .....	Commission 25 p. c.	April 1, 1905	The cable formerly 9½ knots from Point Pelee to the Island is now laid as here indicated 17 knots. The change was effected in August, 1901.
5	Tuldena .....	7½	W. Tilden .....	"	Nov. 1, 1888.	
	Point Pelee .....	2½	W. A. Grubb .....	"		
	Leamington Dock to North Point Cable .....	17			Nov. 1, 1888.	

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## SESSIONAL PAPER No. 19

6 North Point Lighthouse...	8 J. R. Ledwell.....	Commission 25 p. c. ....	June 1, 1899
7 North Dock.....	C. B. Quick.....	" " " " " " " "	Nov. 1, 1888
8 Quelletta.....	A. Ouellette.....	Private instrument.....	
9 McCormicks.....	W. J. McCormick.....	Commission 25 p. c. ....	Nov. 9, 1888
10 West Dock.....	A. M. McCormick.....	" " " " " " " "	Oct. 25, 1907
11 Strigley.....	J. James Strigley.....	" " " " " " " "	Aug. 1, 1904
12 South Dock.....	R. E. McCormick.....	" " " " " " " "	
Totals.....	423	50 00	

Accommodation office, formerly Dr. H. O. Van Epp.

NOTE:—This line is operated by telephons.

## QU'APPELLE—ATHABASKA LANDING SECTION.

1	Qu'Appelle.....	0	C. P. R. Tel. Co.....	420 00	Dec. 1, 1906.....	The agent operator at Qu'Appelle is joint with the C. P. R.
2	Ft. Qu'Appelle.....	17	J. W. Wilson, Inman	600 00	Mar. 1, 1902.....	
3	Lipton.....	3	P. R. Elmer.....	600 00	Aug. 15, 1906.....	Miss Johnstone resigned Aug. 15, 1906.
4	Touchwood.....	31	C. P. R. Tel. Co.	Commission 10 p. c. ....	May 1, 1906.....	Agent operator at Lipton, joint C. P. R.
5	Kutawa.....	29	J. Kelly.....	720 00	June 1, 1906.....	Agent operator paid by H. B. Co.
6	South Humboldt.....	6	A. VonLandenburgh.....	720 00	Nov. 1, 1893.....	
7	Saskatoon.....	78	H. J. Macdonald.....	720 00	Feb. 1, 1904.....	
		69	C. P. R. Tel. Co.	300 00	Jan. 1, 1892.....	
			G. T. Clement, Inman	600 00	Oct. 16, 1903.....	
8	Waman.....	11	Can. Nor. Ry. Co.	Comm. 25 p. c. of receipts	Nov. 23, 1905.....	Agent operator joint with C. P. R. Can
9	Henrietta.....	38	W. J. Salisbury.....	720 00	Oct. 1, 1886.....	agent acts as agent on commission.
10	Battleford.....	47	J. D. Noel.....	720 00	" 1, 1900.....	Operated on commission.
			Wm. Dewar.....	600 00	Mar. 1, 1907.....	
11	Breslayor.....	27	J. T. Gallahan.....	720 00	Dec. 1, 1900.....	G. Donovan resigned July 31, 1906.
12	Lloydminster.....	70	E. A. McCleughan.....	600 00	April 1, 1904.....	
13	O-nion Lake.....	50	H. McCleughan.....	720 00	Aug. 1, 1899.....	
14	Moose.....	33	G. G. Mann.....	720 00	" 1, 1902.....	
15	St. Paul des Metis.....	32	C. Boulton.....	600 00	Nov. 1, 1906.....	J. A. Therien, resigned Oct. 31, 1906.
16	Saddle Lake.....	13	J. W. Carroll.....	720 00	Sept. 1, 1900.....	Telephone Line from Saddle Lake to Industrial School 6½ miles.
17	Victoria.....	37	R. Gordon.....	600 00	Feb. 1, 1905.....	
18	Andrew.....	10	B. Carey.....	600 00	Mar. 15, 1906.....	Telephone Line from Andrew to Whitford 6 miles.
19	Star.....	18	C. Norr, Inman.....	600 00	" 15, 1906.....	
20	Ft. Saskatchewan.....	25	E. A. Holmes.....	600 00	Aug. 2, 1904.....	
21	Edmonton.....	18	A. W. M. Campbell.....	600 00	Oct. 1, 1898.....	
			Geo. E. MacLeod.....	900 00	Nov. 6, 1906.....	
22	Half Way Lake.....	49	W. McKay, Inman.....	780 00	May 1, 1886.....	
23	Athabaska Landing.....	49	Miss C. Egge.....	Commission 25 p. c. ....	Oct. 1, 1908.....	
			Jas. McKernan.....	600 00	" 1, 1904.....	
				15,360 00		
		750				

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GOVERNMENT TELEGRAPH SERVICE—Continued.  
QU'APPELLE-ATHABASKA LANDING SECTION—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
	Telephone extension.	Miles.		\$ c.		
24	Whitford .....	7	The postmaster.. ..	Commission 25 p. c. . .	July 1, 1905.....	Connection is made with the telegraph office at Andrew.
BRANCH LINES.						
25	Edmonton .....		R. C. McDonald, supt.	1,800 00 per annum.....	Oct. 1, 1905 .....	Salary increased to \$1,800 April 1, 1908. These branch lines are operated by the Edmonton District Telephone Co.
26	Winterburn .....	8	J. S. Macdonald, gen. ins.	2,000 00 .....	June 1, 1905.....	
27	Stoney Plain .....	5½				
28	Spence Grove .....	8				
29	Stoney Plain Station .....	6½				
30	" Centre .....	3½				
31	St. Albert .....	9				
32	Raye .....	12				
33	Rivières-qui-Barre .....	8				
34	Alexandria .....	5				
		65½		3,800 00 .....		
WOOL MOUNTAIN SECTION.						
1	Moosejaw .....		C. P. R. Tel. Co. . .	240 00 .....	Dec. 1, 1891 .....	The Agent operator at Moosejaw is joint with C.P.R.
2	Limerick .....	60	H. Silken, batteryman..	120 00 .....	Dec. 1, 1893 .....	
			J. W. Wilson .....	720 00 .....	Oct. 1, 1908 .....	
3	Wood Mountain .....	30	J. H. Thomson .....	600 00 .....	Dec. 1, 1890 .....	
			F. Brown, fireman .....	600 00 .....	Nov. 1, 1905 .....	
4	Willow-Bunch .....	40	M. A. Noel .....	600 00 .....	Oct. 19, 1904 .....	
		130		2,880 00 .....		





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## GOVERNMENT TELEGRAPH SERVICE—Continued.

## LINES IN BRITISH COLUMBIA.

No.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
	<i>Kamloops—Lorne—Nicola.</i> Telephone Line.	Miles.	(See note in margin).		\$ cts.		
1	Kamloops .....	0	C. S. Stevens.	Dist. Supr.	1,200 00	June 1, 1904	NOTE.—The lessees pay a monthly rent for the connections, and are allowed 25 per cent commission on local tolls for messages and conversations of non-subscribers.
2	Anderson Creek .....	12	Miss B. McKnight.	Clerk & Agent	420 00	July, 1901	
3	Nicola .....	13	W. McLeod.	Agent	480 00	" 1901	
4	Stumps Lake .....	13	Mrs. M. V. Munro.	Exc. oper.	480 00	" 1901	
5	Beaver Ranch .....	20	Thos. Bannan.	"	"	" 1901	Three additional connections in July, 1901. Add at Nicola Lake, July 1, or Government Office, Dr. Sutton, A. R. Carrington.
6	Quelchena .....	9	J. W. Moor.	"	"	May, 1900	
7	Nicola Lake .....	9	F. O'Rourke.	"	"	" 1900	
8	Conthoe .....	13	A. E. Howse.	"	"	July, 1901	
9	Lower Nicola .....	24	Blair & Co.	"	"	May, 1900	See note in body of report.
10	Aspen Grove .....	2	G. Armstrong.	"	"	" 1905	
11	Outer Valley .....	25	A. E. Howse & Co.	"	180 00	Feb. 1, 1905	
12	Princeton .....	25	John Love.	Exc. oper.	480 00	" 1, 1905	
13	Hedley .....	20	"	"	"	" 1, 1905	This line is operated both as a telephone and telegraph line. Joint agent with C. P. Telegraph. The commission is 25 per cent of the Government line tolls.
14	Keremeos .....	12	"	"	120 00	" 1, 1905	
15	Fairview .....	57	J. A. Schubert.	"	"	" 1, 1905	
16	Penticton .....	235	"	"	2,880 00	" 1, 1905	
	Total .....						
	<i>Vernon—Kilowna</i> Line.				\$ cts.		
1	Vernon .....	0	Miss G. E. Seaton.	Act. and oper.	360 00	Mar. 1, 1905	This line is operated both as a telephone and telegraph line. Joint agent with C. P. Telegraph. The commission is 25 per cent of the Government line tolls.
2	Kilowna .....	35	A. S. Muir.	Telephone act.	Commiss.	" 1, 1905	
			H. H. Miller & Co.	Ag'ts tel. & tele	720 00	" 1, 1905	
			A. L. Weeks.	Lineman	720 00	Aug. 1, 1905	
	Total .....	35			1,800 00		

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## GOVERNMENT TELEGRAPH SERVICE—Continued.

## BRITISH COLUMBIA—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appoint- ment.	Memo.	
	<i>Victoria—Cape Beale.</i>	Miles.	(See note in margin).	\$ cts.			
1	Cape Beale.....	0	W. L. Thompson.....	480 00	Oct. 6, 1908	NOTE.—The superintendence of this line has been in the hands of the resident architect at Victoria since October, 1901, when the arrangements theretofore in operation with the C. P. Ry. Co. was terminated. Formerly at Ucluelet.	
2	Carmahuish.....	28	W. P. Daykin.....	360 00	Nov. 1, 1891		
3	Port Renfrew.....	24	Mrs. E. C. Williams.....	480 00	Sept. 22, 1903		
4	Otter Point.....	30	Mrs. Gordon.....	360 00	Dec. 1, 1891		
5	Sooke.....	18	E. Milne.....	25% Com.	Apr. 1, 1907		
6	Victoria.....	18	(Wm. Dea Gordon McKay)	1,200 00 240 00	Dec. 1, 1907		
	Totals.....	118					
REPAIRERS SECTIONS.							
	<i>Cape Beale—Bunfield—Darling.</i>						
	Darling—Cloose.....	9	C. E. Mauley.....	720 00	Aug. 22, 1907	Allowance of \$7.50 horse hire when necessary to come to Victoria repairing line. During winter months only.	
	Cloose—Kowaleh.....	8	D. Logan.....	720 00			
	Kowaleh—Port Renfrew.....	12	J. Murphy.....	720 00	Oct. 1, 1908		
	Port Renfrew—Lost Creek.....	14	J. Martin.....	720 00			
	Lost Creek—Jordan River.....	15	T. M. Baird.....	720 00			
	Jordan River—Otter Point.....	15	M. Hay.....	720 00			
	Otter Point—Victoria.....	15	J. N. MacVicar, Acting Ins. C. Gordon.....	720 00 720 00			
	Totals.....	118					

\* Telephone connections for the convenience of several firms in the neighbourhood have been established at *Jordan River* for Messrs. Bell, Irving & Co., Point-  
no Point; The B. C. Packer's Assn., Point-no Point and Jordan River; Capital City Canning Co., French's Ranch; J. H. Todd & Co., Coal Creek; 5 connections.  
At *Otter Point* for Messrs. J. H. Todd & Son, The B. C. Packers's Assn., Capital City Canning Co. and the B. C. Mess.; one connection in common at Sooke Wharf.  
The charge for the telephone in each of the above instances is \$46 per year; the regular telegraph tolls being paid in addition.

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## GOVERNMENT TELEGRAPH SERVICE—Continued.

## BRITISH COLUMBIA—Continued.

Number.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
	<i>Nanaimo-Comox.</i>	Miles.			\$ cts.		
1	Nanaimo .....	0	A. M. Oliver .....	Agt. and Opr. Messenger .....	900 00	Jan. 1, 1908.	The superintendence of this line is in the hands of Wm. Henderson, Esq., Victoria, B.C.
2	Wellington .....	5	W. Spencer .....	Actg. Agent .....	240 00	May 5, 1908.	
3	Parksville .....	23	E. & N. Ry. Co. ....	Actg. Agent .....	Commiss. ....	April 1, 1893.	Parksville, Quilicum section.
			J. G. McKay .....	Lineman .....	480 00	June 1, 1903	
			W. Mills .....	Art. and Opr. Lineman .....	600 00	Dec. 30, 1907	
			J. McNeil .....	Accommodat'n Agt. and Opr. Teleph. ....	720 00	Nov. 17, 1898.	
4	Union Bay .....	32½	J. Thos. Hudson .....		900 00		Courtesy and Comox communicate by telephone at prearranged intervals.
5	Union Mines .....	10	J. Dunsmair .....		720 00		
6	Cumberland .....	7	J. McPhee & Son .....		25 % com'n	Nov. 1, 1895	
7	Courtenay .....	7½	M. McDonald .....		480 00		Wm. Henderson, Esq., superintendant, Victoria, B.C. NOTE.—The repairs of this line have been done conjointly with the Can. Pac. Telegraph since December 1, 1902.
8	Comox .....				5,040 00		
	<b>Totals .....</b>	<b>81</b>					
	<i>Parksville, Alberni and Cape Beale Line.</i>						
	Parksville .....	0	(See above).	Agt. and Opr.	240 00	Oct. 1, 1899.	Proportion of salary for Comox line included.
	Alberni .....	29½	Mrs. P. A. Haslam .....	" " "	240 00		
	Haufield Creek .....	53	Mrs. E. M. Scott .....	" " "	240 00		
1	Cape Beale .....	4	M. Patterson .....	" " "	240 00	May 1, 1900.	Proportion of salary for this line.
2	<b>Totals .....</b>	<b>86½</b>			720 00		

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## GOVERNMENT TELEGRAPH SERVICE—Continued.

## BRITISH COLUMBIA—Continued.

Number.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
<i>Alberni-Clayoquot Line.</i>							
1	Alberni.....	0	P. O. Haslam.....	Agt. and Opr.	\$ cts. 180 00	Dec. 1, 1902..	Wm. Henderson, Esq., Supt., Victoria, B.C. Proportion for this line. Line crosses canal at this point by submarine cable.
2	New Alberni .....	2	E. A. Waterhouse .....	" " "	25 / com.	Oct. 1, 1903..	
3	Franklin Creek, 4 mile cable.	8					
3	Uchuckleast.....	10	F. Tyler .....	Agt. line-man.	600 00	.....	Section extends from Franklin Creek to Pipestem In- let; post office address, New Alberni.
4	Toquart.....	5	J. E. Hillier .....	" " "	780 00	Nov. 16, 1908	
5	Uchebet.....	5½	H. J. Hillier .....	" " "	720 00	Dec. 1, 1902	
6	Clayoquot .....	66½	E. B. Garrard .....	" " "	720 00	Oct. 1, 1902	Private cable connection for local firm.
	Stabbs Island .....			Accomm. Ofc.	.....	.....	
		90½			3,060 00		
<i>Golden-Windermere Line.</i>							
1	Wilner.....	0	Mrs. J. E. Brechant .....	Agt. and Opr.	480 00	Oct. 1, 1908	Wm. Henderson, Esq., Supt., Victoria, B.C.
2	Athahner .....	5	J. Lake.....	" " "	Commission.	" "	
3	Windermere .....	5	J. C. Pitts.....	" " "	" "	" "	
4	Spillimacheen.....	16		" " "	940 00	" "	
5	Golden .....	66	J. A. Buckham..... (G. E. Sanborn .....	" " " Line repairer (Golden to Windermere	480 00 1,080 00 2,940 00	" " " "	

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GOVERNMENT TELEGRAPH SERVICE—*Continued.*  
BRITISH COLUMBIA—*Continued*

Number.	Stations.	Inter- mediate Distances.	Agents, &c.	Positions.	Salaries per annum.	Date of Appointment.	Memo.
	<i>Vancouver-Salt Springs Line.</i>	Miles.					
1	Cable Landing to	9	E. Castley.....	Agt. and Opr.	25 $\frac{1}{2}$ comms.	July 1, 1905	
2	Duncan Station.....	3	T. Aitken.....	"	"	" 1, 1905	
3	Maple Bay.....	3	A. Chisholm.....	"	"	" 1, 1905	
4	Chisholms.....	3	Edwards & Co.....	"	"	Mar. 1, 1902	
5	Edwards Store.....	3	H. Ruckles.....	"	"		
6	Beaver Point.....	2	Bullman-Allison, L. Co.	"	"		
7	Cushion Cove.....	2	G. J. Mowat & Co.....	"	"		
8	Ganges Harbour.....	4	L. S. Higgs.....	"	"		
9	South Pender.....		A. R. Spalding.....	"	"	July 1, 1905	
10	" Wharf.....		W. Barckett.....	"	"		
11	Browning Harbour.....		J. Auchterlonie.....	"	"		
12	Hope Bay.....		A. A. Davidson.....	"	"		
13	Clam Bay.....		A. Deacon.....	"	"		
14	Village Bay.....		C. J. Macdonald.....	"	"		
15	Mayne Isl. Hotel.....		G. Georgeson.....	"	"		
16	Pt. Comfort Lighthouse.		Barrill Bros.....	"	"		
	Galiano Island.....			"	"		

## SESSIONAL PAPER No. 19

## GOVERNMENT TELEGRAPH SERVICE

## YUKON LINES.

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, which includes  
 Port Simpson, Barkerville, Quesnelle and Lillooet branches corrected to date.

Number.	Stations.	Interm'diate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				\$ cts.		
1 Ashcroft.....			C. E. Gooding, manager.....	60 00		
			C. Belleau, operator.....	45 00		
			G. W. McKay, ".....	42 00		
			R. A. Gooding, lineman.....	75 00		
			R. P. Quain, clerk.....	83 37		
Cache Creek.....		4	Accommodation office.....	50 p. c. com.	25 and 2	25 and 1
2 Bonaparte ..		34	" " ".....	"	25 " 2	25 " 1
3 Pavilion.....	*	36½	Mrs. Bryson, ".....	"	50 " 3	25 " 1
4 Lillooet.....		22	S. A. McFarlane, agt. & lineman..	60 00	50 " 3	25 " 1
5 Clinton.....		33	E. LeBourdais, opr. and lineman..	60 00	25 " 2	25 " 1
6 115 Mile House.....		55	Oscar Landry, " ".....	60 00	25 " 2	25 " 1
7 150 ".....		35	T. F. Murphy, " ".....	75 00	50 " 3	30 " 2
8 Harpers Camp.....		33	R. L. Murphy, " ".....	75 00		
9 Bullion.....	†	27	A. J. Patenaud " ".....	60 00	50 " 3	30 " 2
10 Quesnelle Forks.....		4	Grant Grinder, opr. & lineman..	66 74	50 " 3	30 " 2
11 Soda Creek.....		28½	C. H. Smith, " ".....	60 00	50 " 3	30 " 2
12 Alexandria.....		21	J. A. Bowles, " ".....	60 00	50 " 3	30 " 2
13 Quesnelle.....		33	S. H. Parendude, " ".....	75 00	50 " 3	30 " 2
14 Lafontaine.....	‡	46	Cariboo Consolidated Co.....	50 p. c. com.	50 " 3	
15 Barkerville.....	‡	15	D. M. LeBourdais, opr. & lineman..	60 00	50 " 3	
16 Blackwater & Fraser Lake.....		42	G. Duclos, lineman.....	70 00		
17 Bobtail Lake.....		37	S. G. Lawrence, operator.....	75 00	75 " 5	
			R. W. Smith, ".....	75 00	75 " 5	
			W. J. McAllan, lineman.....	70 00		
18 Nechaco.....		32	W. J. Milne, operator.....	75 00	75 " 5	
			J. D. Charleson, lineman.....	70 00		
19 Fraser Lake.....		21	G. W. Proctor, operator.....	75 00	75 " 5	
			Harry LeDuke, lineman.....	70 00		
20 Burns Lake.....		55	M. McKinley, operator.....	75 00		
			G. Wallace, lineman.....	70 00	100 " 7	
21 South Bulkley.....		27	F. J. Burns, ".....	70 00	100 " 7	
			W. N. Clark, operator.....	75 00		
22 North Bulkley.....						
23 Aldermere.....		52	E. Murphy, operator.....	75 00	125 " 10	
			H. Fink, lineman.....	70 00	125 " 10	
24 Morricetown.....			A. T. Carpenter, operator.....	75 00		
25 Hazelton.....		50	G. M. Swan, ".....	100 00	125 " 10	
			E. R. Cox, ".....	100 00		
			E. E. Charleson, line foreman....	150 00		
			W. W. Wrathall, opr. & lineman..	75 00		
			F. Charleson, lineman.....	70 00		
26 Meanskinisht§.....		35	K. O'Neil, operator.....	50 00	125 " 10	
			R. Tomlinson, lineman.....	75 00		
27 Skeena Canyon §..		47	J. W. Graham, operator.....	75 00		
			C. Durham, lineman.....	70 00		
28 Lorne Creek§.....		24	J. E. Wise, operator.....	75 00		
			C. E. Carpenter, lineman.....	70 00		
29 Kitselas.....			S. W. Dobbie, operator.....	75 00		
			I. L. Daniels, lineman.....	70 00		
30 Kitsumkalum.....			P. Burnell, operator.....	75 00		
31 Hole-in-Wall.....			W. Loisel, ".....	75 00		
32 Graveyard Pt.§...			J. O'Regan, ".....	75 00	150 " 10	
			F. D. Wilson, lineman.....	70 00		
33 Telegraph Point§..		53	J. H. Waller, operator.....	75 00		
			J. Otero, lineman.....	70 00	150 " 10	
34 Aberdeen§.....		41	H. N. Boss, operator.....	75 00		
			R. Donaldson, lineman.....	70 00		
35 Port Simpson§.....		39	M. W. O'Neil, operator.....	50 00		
36 1st Cabin.....		27	Hugh Taylor, operator.....	70 00		

\* Branch from Ashcroft.    † 150 Mile House.    ‡ Quesnelle.    § Hazelton.

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GOVERNMENT TELEGRAPH SERVICE—*Continued.*

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, &c.—Continued to date.

YUKON LINES.—*Continued.*

Number.	Stations.	Inter- mediate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				\$ cts.		
37	2nd Cabin.....	22	F. J. Hughes, operator.....	70 00		
			W. R. S. Oag, lineman.....	75 00		
38	3rd Cabin.....	25	A. E. Falconer, operator.....	70 00		
			Leonard Mason, lineman.....	75 00		
39	4th Cabin.....	20	Douglas Potts, operator.....	70 00		
			H. P. Large, lineman.....	100 00		
40	5th Cabin.....	20	E. A. Hawley, operator.....	83 p. day		
			W. Ross, lineman.....	100 00		
41	6th Cabin.....	20	G. T. Brown, operator.....	83 p. day		
			G. Barrett, lineman.....	100 00		
42	7th Cabin.....	19	T. E. Hankin, operator.....	83 p. day		
			L. Dubois, lineman.....	100 00		
43	8th Cabin.....	19	G. Hill, operator.....	83 p. day		
			R. Todd, lineman.....	100 00		
44	9th Cabin.....	17	C. W. Smith, operator.....	83 p. day		
			C. Jepsen, lineman.....	100 00		
45	Echo Lake.....	32	J. Muir, operator.....	83 p. day		
			C. Vance, lineman.....	100 00		
46	25-Mile Cabin.....	25	E. Barrett, operator.....	83 p. day		
			Ernest Seeley, lineman.....	82 50		
47	Raspberry Creek.....		J. A. Thorne, operator.....	75 00		
			A. H. Webb, lineman.....	100 00	175 and 10	
48	Iskoot.....	16	F. N. Jackson, operator.....	83 p. day		
			F. Bullock-Webster, lineman.....	100 00		
49	Telegraph Creek.....	61	A. S. Gillespie, operator.....	175 00		
			W. S. Simpson, lineman.....	50 00		
			A. J. Charleson, line foreman.....	82 50		
50	Shesley.....	45	A. Johnson, operator.....	75 00		
			S. G. Lawrence, operator.....	82 50	200 " 15	
51	Nahlin.....	61	J. Pilling, lineman.....	75 00		
			Geo. Counts, operator.....	82 50		
52	Nakina.....	49	J. Haston, lineman.....	75 00		
			R. J. Barton, lineman & operator.....	82 50		
53	Pike River.....	40	F. W. Dowling, circuit manager.....	116 65		
54	Atlin.....	23	A. B. Taylor.....	100 00		
			D. H. Gagné, line foreman.....	75 00		
55	Center Cabin.....	35	J. Stronach, operator.....	82 50	225 " 15	
56	Tagish.....	40	J. B. Watson, operator.....	82 50		
			A. Stanbridge, lineman.....	75 00		
			S. E. Chambers, operator.....	82 50		
57	Carcross.....	18		175 00	250 " 15	
58	Whitehorse.....	65	H. Gilchen, dist. supt.....	150 00		
			J. Hope, operator.....	115 00		
			W. Lafontaine, clerk.....	75 00		
			H. Kamayama, cook & housekeeper.....	75 00		
			Wm. Watson, messenger.....	25 00		
				75 00		
59	Lower Leberge.....	59	Douglas Potts, operator.....	82 50		
60	Hootalinqua.....	39	R. T. McDonald, operator.....	82 50		
61	Big Salmon.....	34	H. O. Lokken, lineman.....	75 00		
			W. C. Fraser, operator.....	82 50		
62	Tantalus.....	30	R. Daoust, operator.....	82 50		
63	Five Fingers.....		R. O. Freeman, operator.....	82 50		
64	Yukon Crossing.....	8	Aubry Tennant, operator.....	82 50		
			M. Monson, lineman.....	75 00	275 " 15	
65	Fort Selkirk.....	50	Geo. A. McLachlan, operator.....	82 50		
			C. Harkness, lineman.....	75 00		
66	Selwyn.....	30	R. P. Hall, operator.....	82 50		
			A. Morrison, line foreman.....	75 00		
67	Stewart River.....	75	Gustin Aish, operator.....	82 50		
68	Ogilvie.....	23	J. W. Wilkinson, operator.....	82 50	300 " 20	



## SESSIONAL PAPER No. 19

## GOVERNMENT TELEGRAPH SERVICE

NAMES of employees and monthly salaries, &c, Yukon Telegraph Service, &c.—*Con.*YUKON LINES—*Concluded to date.*

Number.	Stations.	Intermediate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				\$ cts.		
69	Dawson .....	48	W. Brownlow, manager .....	150 00		
			D. S. McKenzie, day operator .....	125 00		
			J. P. Champagne, cashier .....	125 00		
			A. S. Killam, messenger .....	83 p. day		
				100 00		
				80 00		
			C. A. Couture, line foreman .....	125 00		
70	Forty Mile .....	55	W. H. Mullin, operator .....	82 50		
71	Boundary .....	40			325 " 25	
	Prince Rupert .....		H. B. Rochester, operator .....	75 00		
			K. Smith, lineman .....	70 00		
	Vancouver .....		J. T. Phelan, acting supt. ....	175 00		
			J. J. Healy, clerk .....	140 00		
			Emma Keays, stenographer .....	75 00		
	Total .....	2,252½				

## YUKON TARIFFS.

The rates given above for points north of Quesnelle are one-third less than those primarily adopted, which were calculated on the general basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, counting the distance from Ashcroft.

The local rates between offices north of Quesnelle are calculated on the basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, and the local rates between offices north of Atlin are fixed at 50 cents for each 100 miles.

*Cable Messages.*—On transatlantic business, the word rate is twice as much as the additional word rate given in the list for all points north of Ashcroft-Barkerville,  $3 \times 2 = 6c.$ ; Dawson,  $20 \times 2 = 40c.$  per word.

On transatlantic business the word rate is the additional word rate plus 4c.; Barkerville,  $3 + 4 = 7c.$ ; Dawson,  $20 + 4 = 24c.$  per word to or from Ashcroft.

*Press Despatches.*—For the Yukon line the rate is 1 cent per word, minimum charge, \$1; this applies to the whole line. Exception, Barkerville-Ashcroft section (local), minimum charge 50 cents.

Yukon system connects at boundary with U.S. Sig. Service Telegraph System.

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## GOVERNMENT TELEGRAPH LINES.

## SPECIAL TARIFF.

*Cable Messages.*—Rates for cable messages passing over the Yukon line will be found in connection with the Yukon tariff in the preceding pages.

Elsewhere, the rate for transatlantic messages passing over the government lines is the same as for ordinary through messages, excepting where the ordinary tariff is more than 25 cents; in such cases the government line rate is 4 cents per word, with a minimum charge of 25 cents. For example:—

For a message of six words or less, the charge is 25 cents for government lines.

For a message of seven words the charge is (7x4) 28 cents for government lines.

For a message of twelve words the charge is (12x4) 48 cents for government line.

In every case the counting of words includes the address and signature in the same way as for transatlantic cable tolls.

*Press Despatches.*—The rate for press despatches on the government lines (excepting the Yukon line), is 20 cents per 100 words; no single message less than 20 cents.

For the Yukon line the rate is 1 cent per word, minimum charge \$1; this applies to the whole line. Exception, Barkerville-Ashcroft section (local), minimum charge 50 cents.

## REGULAR TARIFF.

## NOVA SCOTIA.

*Line from North Sydney to Meat Cove and Mabou—Local rate, 25-1\* (20 offices).*

Big Bras d'Or... . . . . Through rate 15-1 from North Sydney, W.U. office.  
New Campbellton's (Kelly's

Cove) . . . . .	"	"	"
Englishtown . . . . .	"	"	"
Baddeck . . . . .	"	"	"
Murray . . . . .	"	"	"
Indian Brook . . . . .	"	"	"
French River . . . . .	"	"	"
South Ingonish . . . . .	"	"	"
Ingonish . . . . .	"	"	"
Neils Harbour . . . . .	"	"	"
Dingwall . . . . .	"	"	"
Aspy Bay . . . . .	"	"	"
Meat Cove . . . . .	"	"	"
Pleasant Bay . . . . .	"	"	"
Cheticamp . . . . .	"	"	"
Grand Etang . . . . .	"	"	"
Northeast Margaree . . . . .	"	"	"
Margaree Harbour . . . . .	"	"	"
Southwest Margaree . . . . .	"	"	"
Inverness Town (Broad Cove) . . . . .	"	"	"

Night messages are exchanged with the Western Union Telegraph Company for offices on this line. Rate, 1 cent per word with minimum of 15 cents. The local night rate is 1 cent per word with minimum of 25 cents.

\* When the tariff rate is entered as 25-1 or 50-2 &c., the meaning is that the rate is 25 cents or 50 cents for ten words and 1 cent or 2 cents for each additional word.

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*Line from Barrington to Cape Sable—Local rate, 12-1.*

Newellton. . . . .Through rate 12-1 from Barrington, W. U. office.  
 Cape Sable Lighthouse. . . . . " " "

This line is now operated by the local telephone company. Terms of lease provide for former telegraph rate as above not being exceeded.

## NEW BRUNSWICK.

*Line from Chatham to Point Escuminac—Local rate 25-1 (4 offices).*

Bay du Vin. . . . .Through rate 15-1 from Chatham, G. N. W. office.  
 Lower Hardwicke. . . . . " " "  
 Escuminac. . . . . " " "  
 Pt. Escuminac Lt. House. . . . . " " "

*Line from Eastport, Me., to Campobello, Grand Manan, and Whitehead Islands (9 offices)—Local rates between offices on Grand Manan and Whitehead Islands, 15-1; Grand Manan and Campobello Island, 25-2; The Islands and Eastport, Me., 25-2, W. U. O.*

Welshpool, Campobello. . . . .Through rate 25-2 from Eastport, Me., W. U. office.  
 Flagg's Cove, Grand Manan. . . . . " " "  
 Castalia. . . . . " " "  
 Woodward's Cove. . . . . " " "  
 Grand Harbour. . . . . " " "  
 Seal Cove. . . . . " " "  
 Southern Head. . . . . " " "  
 Cheneys Head. . . . . " " "  
 Whitehead Islands. . . . . " " "

## QUEBEC.

*Line from Gaspé to Anticosti Island, Q. (9 offices)—Local rates between offices on the Island, 25-1; Gaspé and the Island offices, 50-2.*

Southwest Point. . . . .Through rate 50-2 from Gaspé, G. N. W. office.  
 Salt Lake. . . . . " " "  
 Shallop Creek. . . . . " " "  
 South Point. . . . . " " "  
 Heath Point. . . . . " " "  
 Fox Bay. . . . . " " "  
 Becschie River. . . . . " " "  
 West Point. . . . . " " "  
 English Bay. . . . . " " "

*Line from Meat Cove, C.B., N.S., to Magdalen Islands, Q. (9 offices)—Local rates between offices on the Islands, 25-1; Meat Cove and the Islands, 50-2; offices on the Meat Cove line and the Islands, 50-2.*

Amherst Island. . . . .Through rate 50-2 from North Sydney, W. U. office.  
 Amherst Lt. House. . . . . " " "  
 Etang du Nord Village. . . . . " " "  
 Etang du Nord Lt. House. . . . . " " "  
 Cap aux Meules (Grindstone). . . . . " " "  
 House Harbour. . . . . " " "  
 Grosse Isle. . . . . " " "  
 Grand Entry. . . . . " " "  
 South Beach. . . . . " " "  
 Bryon Island. . . . . " " "

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*Line from Meat Cove, C.B., N.S., to St. Pauls Island—Local rate between offices on Meat Cove line and St. Pauls, 50-2 (1 office)*

St. Pauls Island Lt. House, 50-2 from North Sydney, N.S., W.U. office.

*Line from Quebec to Grosse Isle Quarantine Station (7 offices)—Local rates between offices on Orleans Island and Isle Réaux, 15-1; on Orleans Island, Isle Réaux and Quebec, 15-1; on Orleans Island and Grosse Isle, 25-1; on Isle Réaux and Grosse Isle, 15-1.*

St. Pierre, Orleans Island.. . . .	Through rate 15-1 from Quebec, G. N. W. office.
Ste. Pétronille.... .	" " "
St. Laurent.. . . .	" " "
St. Jean.. . . .	" " "
St. Famille... . .	" " "
St. François.. . . .	" " "
Isle Réaux.. . . .	" " "
Grosse Isle.. . . .	" 25-1 " "

*Lines in Chicoutimi District, including points west of Bersimis.—Local rate between offices within 100 miles apart, 15-1; over 100 miles, 25-1. Between offices on government line and offices on the G. N. W. Company's line as far as and including Quebec, 25-2. Through rate is the above-mentioned local rate between government line offices to connect with the G. N. W. Tel., plus the full charge of the G. N. W. Tel. Co., for points beyond Quebec.*

*Line from Bersimis to Chateau Bay, with branch to Anticosti from Long Point of Mingan.—Local rate between offices within 100 miles apart, 15-1; over 100 miles, 25-1; on mainland and Anticosti, 50-2. These same rates apply to government line offices east and west of Bersimis.*

The checking of all through business exchanged with the G. N. W. Tel. Co. is done with Quebec.

## ONTARIO.

*Line from Leamington to Pelee Island (Telephone Circuit)—Local rates between Leamington and Point Pelee, 15-1; mainland and Island offices, 25-1; offices on the island, 15-1 (8 offices).*

Gun Club House, mainland.. . . .	15-1 (through business) from Leamington, G.N.W.
Point Pelee, mainland... . .	" " "
Leamington Dock.. . . .	" " "
Bairds.. . . .	" " "
North Pt. Lt. House, Pelee Id.	" " "
North Dock, Pelee Island... .	" " "
McIntyre's Corners... . .	" " "
West Dock, Pelee Island.. . . .	" " "
South Dock.. . . .	" " "

## NORTHWEST TERRITORIES.

*Line from Qu'Appelle (C.P.R. Sta.) to Edmonton, Alberta—Local rates, 15-1, 25-2, 35-3 distances 10 to 600 miles (13 offices).*

Fort Qu'Appelle.. . . .	25-2 Qu'Appelle or Saskatoon.
Touchwood.. . . .	" " "
Saskatoon .. . . .	" " "
Saskatoon (T's office C.P.R. Tel.)..	" " "
Henrietta.. . . .	" " "
Battleford " " "	" " "

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Bresaylor .. . . .	25-2	Saskatoon; 35-3	Qu'Appelle or Edmonton.
Onion Lake .. . . .	"	"	"
Moose .. . . .	"	"	"
St. Paul de Métis .. . . .	35-3	Saskatoon,	Qu'Appelle or Edmonton.
Saddle Lake .. . . .	"	"	"
Victoria .. . . .	25-2	Edmonton; 35-3	Qu'Appelle or Saskatoon.
Andrew .. . . .	"	"	"
Star .. . . .	"	"	"
Fort Saskatchewan .. . . .	"	"	"
Edmonton ((Transfer office, C.P.R.			
Tel.) .. . . .	"	"	"
Athabasca Landing .. . . .	"	"	"

*Line from Moosejaw (C.P. Stn.) to Wood Mountain—Local rates, 25-2 (1 office).*

Wood Mountain .. . . . 25-2 from Moosejaw.

## BRITISH COLUMBIA.

*Line from Victoria to Cape Beale—Local rate, 25-2 (6 offices).*

Sooke .. . . .	25-2	from Victoria, C. P. R. Tel. office.
Otter Point .. . . .	"	"
Jordan River .. . . .	"	"
Port San Juan .. . . .	"	"
Carmanah Lt. House .. . . .	"	"
Cape Beale .. . . .	"	"

*Line from Nanaimo to Comox—Local rate, 25-2 (9 offices).*

Wellington (C.P.R. and E. & N. Ry.) .. . . .	25-2	from Nanaimo.
Parksville .. . . .	"	or Wellington.
Fanny Bay .. . . .	"	"
Cumberland .. . . .	"	"
Union Bay .. . . .	"	"
Union Mines .. . . .	"	"
Courtney .. . . .	"	"
Comox .. . . .	"	"
Alberni (branch) .. . . .	"	"

*Line from Alberni to Cape Beale—Local rate, 25-2.*

Between offices on the Victoria-Cape Beale line and the Nanaimo-Comox line, via Alberni, 25-2.

*Line from Golden to Windermere—Local rate, 25-2 (3 offices).*

1. Athalmer .. . . .	25-2	from Golden (C. P. R.).
2. Wilmer .. . . .	"	"
3. Windermere .. . . .	"	"

*Line from Kamloops to Lower Nicola (Telephone) (16 offices).*

Connections are leased and lessees allowed commission on messages of non-subscribers. Tariff, 25-2 local from Kamloops, and for conversations, 25 cents for five minutes, half that rate for each additional five minutes or fraction thereof.

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*Yukon System.*

Tariff rates for the Yukon lines are given in the table of staff, &c., in the foregoing pages.

SUMMARY.

Offices on government line, as listed.. . . .	401
Offices at transfer points with connecting lines.. . . .	16
	<hr/>
Total number embraced by the service.. . . .	417

## APPENDICES

### GOVERNMENT TELEGRAPH SERVICE

ANNUAL REPORT FOR 1908-9.

- Sectional reference (1) Cape Breton lines.  
(2) Bay of Fundy lines.  
(3) Magdalen Islands.  
(4) Anticosti Island lines.  
(5) North Shore, St. Lawrence and Chicoutimi.  
(6) Quarantine Telegraph system.  
(7) Pelee Island system.  
(8) Northwest lines.  
(9) " (Inspector).  
(10) British Columbia lines.  
(11) Kamloops-Penticton lines.  
(12) Yukon telegraphs.  
(13) Cable ship *Tyrian*.





## REPORT No. 1.

ST. JOHN, N.B., June 4, 1909.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraph Service,  
Ottawa.

DEAR SIR,—I beg leave to submit the following report on the government telegraph lines in Cape Breton for the year ending March 31, 1909.

	Miles in Operation.	Number of Offices.	Number of Operators.	Number of Repairers and Linemen.
At date of last report.....	609½	66	66	27
Added during the year.....	17	3	3	.....
At date of this report.....	626½	69	69	27

The additional mileage covers the new line from Castle Bay to Grand Narrows, 16 miles, completed December 10; and an extension of one mile to connect with new landings of the Mainadieu-Scattarie Island cable.

Poles were also got for the proposed extension from Enon to Victoria bridge, of which 360 have been set, but on account of the severity of the weather the balance of the work was deferred until the coming summer.

New offices were opened at the under-mentioned places, viz.:—

Enon, C.B., with Miss Effie McDonald agent, salary \$50 per annum, April 1, 1908.

Wreck Cove, C.B., with Miss Mary Morrison agent and operator, salary \$50 per annum, October 6, 1908.

Margaree Forks, C.B., with Miss Sarah McDougall agent, salary \$50 per annum, December 10, 1908.

Miss Flora Jamieson, agent at Inverness, C.B., salary, this line receipts and 50 per cent of checks, resigned July 15, and Miss Annie Smith was appointed, salary 50 per cent this line receipts and checks.

On September 30 this office was removed from the private dwelling of Miss Smith to the new government building.

Miss Mary Dickson, agent at Mainadieu, resigned August 31, and was succeeded by Miss Hattie Dickson at the same salary, viz., \$50 per annum.

Ambrose Smith, of Port Hood Island, was appointed repairer, covering section from Port Hood office to the furthest office on Outer or Henry Island, salary \$20 per annum, including horse hire and expenses.

Salary of J. G. Chaisson, repairer of the Cheticamp-Barren section, was increased from \$40 to \$50 per annum March 1, 1909.

Cable connections with the Magdalens and St. Pauls Island have been maintained during the year.

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The poles upon the Hawkesbury-Grand River section were carefully gone over by general repairer Bissett and a large proportion reset. This work should be continued on the sections from Grand River to Gabarus, and from Grand River to Enon before another winter.

Between North Sydney and Scattarie some 250 new poles were set and a large number of old ones reset, which placed this section in very fair order. The cable between Mainadieu and Scattarie Island was moved to a more suitable location and the land lines extended to the new landing places.

The Meat Cove and Boularderie wires, within the limits of the town of North Sydney, were transferred to new cedar poles erected by the Eastern Telephone Company under an arrangement with the company, and it is proposed to extend this arrangement as far as Little Bras d'Or during the coming season.

Yours faithfully,

R. C. DAWSON,  
*Superintendent.*

## REPORT No. 2.

GRAND MANAN, N.B., April 21, 1909.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraph Service,  
Ottawa, Ont.

DEAR SIR,—I beg to submit the following report on the lines in the Bay of Fundy district for the year, from March 31, 1908, to March 31, 1909.

During the month of April we had considerable trouble with the telephone company's wires, partly caused by the company removing one of our poles and neglecting to replace it, as they had arranged to do. Since then we have had very little trouble with their wires except after very severe storms.

The line at Southwest Head has given considerable trouble this year, owing to the unusually severe and numerous thunder storms. Have found it necessary to repair the telephones several times, but it is now working very well.

On August 27, the cable between Eastport and Campobello gave out. The ss. *Tyrian* arrived on September 7 to make the repairs. They found the cable broken near the Eastport landing. Finished repairs on September 9.

While here Mr. McDonald inspected the lines in the district and recommended that a new line be built at Campobello. That the line at Whitehead be moved to the roadside and the ground wire carried from the office to the cable; and that the line at Southwest Head be extended from Mrs. Fraser's, at Seal Cove, to Capt. Ingersoll's store, for the convenience of the lightkeeper, and four new telephones be put in as soon as the weather permitted. I sent our lineman to Whitehead and rebuilt the line as directed; also doing some necessary work on Cheney's island. I found the cable on Ross island had washed out and was exposed for some distance, so had Mr. Russell, of Cheney's island, bury it as deep as it could be done.

Was unable to get the cedar poles for the Campobello line at that place, but have arranged to have them landed there as soon as the weather permits, when the work there will be taken in hand.

The extra work on South Head line has not been done, as I have waited authority of the department regarding telephones. Will have the work done as early as possible, if I can get the telephones. The expense of extending the line will not amount to much, as we have the material on hand.

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The line from Flaggs Cove office to Long Eddy cable landing needs a general repair, the wire being old and some of the poles thrown out by frost. This will be done as soon as the frost is out.

The lines have all given good satisfaction during the year, and the offices well looked after.

Yours faithfully,

C. C. SEELY,

*District Superintendent.*

## REPORT No. 3.

GRINDSTONE, M.I., June 8, 1909.

D. H. KEELEY, Esq.,  
Ottawa.

DEAR SIR,—In continuation to my annual report from September 21, to March 31, the following works and alterations have been done, viz.: A house building, 17 by 19, for the purpose of storing supplies was completed. The winter tariff of  $\frac{1}{2}$  cent a word was reopened on the closing of navigation, December 22, lasting till the arrival of our first mail steamer, May 10. This special rate during our mail steamer interruption and all other interrupted communication affords a great opportunity to the whole public here who take advantage of this benefit to correspond to a large extent with their mainland friends. The Grindstone office was not in operation all last winter, on account of Mr. Leslie's absence to the mainland. The Etang du Nord lighthouse telegraph station has no competent attendant since years past, would suggest a telephone which would correspond a great deal better and would incur no further expenses but the telephone sets.

There has been landed here lately 99 posts. I will have Mr. Binet, the repairer, start the work for the opening of an office at Cape Vert (Barachois), at Mr. Gregoire Cyr's, and follow instructions of last year.

There is no other change or no further particulars concerning my district. Hoping you will have all the satisfactory information by this report,

I am, yours faithfully,

A. LEBOURDAIS,

*District Superintendent.*

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## REPORT No. 4.

WEST POINT OF ANTICOSTI,

April 30, 1909.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraph Service,  
Ottawa, Ont.

DEAR MR. KEELEY,—I beg leave to submit my Annual Report on Government Telegraph Service under my charge for the year ending March 31, 1909, as requested by your letter of the 6th instant.

We have 230 miles of line in operation and I can only repeat myself by saying that owing to the hard and dangerous travelling the cost of keeping the line in good condition is comparatively high.

The arrangement made by Mr. A. Gobeil former Deputy Minister with Mr. Menier's guards came to an end last October as I had the honour to advise your department before. This left me without a single local repairer on the entire length of line. After serious consideration I decided to temporarily engage Horatio Malouin as second general repairer at same salary and subject to same duties as our first general repairer Bourget. All subject to your approval. The department was notified of this arrangement as soon as made, and I hope it has been approved. Since I was not notified of the contrary, the appointment took place on January 1.

Since then (January 1) we had a few interruptions but of no importance, being only a short distance from here. On the whole our line is in good condition, but there will be a good bit of repairs to be done at the east end, where a gale carried many poles and one bridge. I would beg to suggest that two men be added to the general repairer when going on the general repairs so as to make the line A-1 throughout. As you know the east end is very mountainous and rough, two men could not handle the work properly. I am sorry to say that the shore end of the Gaspé cable was badly smashed by the ice this spring. The light keeper, Mr. Lemieux did his utmost to repair it, and so far succeeded that business can be passed on that cable, but a few piece of shore cable is needed, say about 60 feet.

Since the 24th instant the North Shore cable seems to have come to grief also. We have been unable to raise Long Point since that date. Repairer reports land line and cable O.K. as far as he could see.

Maintenance of the line during the past twelve months, viz.—from April 1, 1908, to March 31, 1909, amounts to \$1,046.17, but this comprises all amounts I have had to pay except salaries.

Please permit me to refer you to my last report, dated September 20, 1908, in reference to the change of the spruce telegraph poles, also to the suggestion of appointing two general repairers, made on several occasions, which would somewhat justify the appointment made this winter when nothing better, and I may say, nothing else could be done.

I have the honour to be, sir,

Your obedient servant,

ALE. MALOUIN,

*District Superintendent.*

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## REPORT No. 5.

CHICOUTIMI, May 11, 1909.

D. H. KEELEY, Esq.,  
General Superintendent of Telegraph,  
Public Works Department, Ottawa.

DEAR SIR,—As per your request, I beg to submit herewith my annual report on government telegraph service under my charge for the year ending March 31, 1909, comprising the lines in Chicoutimi, Saguenay and Charlevoix counties.

## MAINTENANCE.

As stated in my last report, the office at Chicoutimi is located in the public building.

Office.	Staff.	Salary.
		8 cts.
Superintendent.....	J. C. Taché.....	300 00
Inspector and Instructor.....	Art. Simard.....	544 00
Operator.....	J. D. Villeneuve.....	460 00
".....	T. Villeneuve.....	480 00
Clerk.....	J. A. Conet.....	180 00
Messenger.....	A. Gagné.....	120 00
Repairer.....	J. Fortin.....	420 00

Operator Jos. Lapointe resigned on April 30, 1908.

Line No. 13, from Quebec to Labrador. The service on this line is interrupted since January 14, on account of the cable between Ste. Catherine and Tadousac being broken. The service is done from Quebec to Chicoutimi, passing by Baie St. Paul, and then on the north shore of the Saguenay river, and on the north shore as far as Bersimis. When the line is in a very good condition we connect Quebec with Bersimis, but when the line is working bad Chicoutimi is obliged to repeat the whole business. I take advantage of this report to draw your attention to this part of the line between St. Fulgence and Sacré Cœur. This line wants repairing for it is the only line we can depend on, when the cable is out of order.

Lines 13 and 21, line No. 21, double line from Malbaie to Ste. Catherine, 38 miles. This line was put in good order last fall, posts were replaced, trees are cut, guides put on where necessary, the repairers Brassard & Boulianne having done good jobs.

Line No. 40, from Baie St. Paul to Chicoutimi, distance 85 miles. This line is in a good condition.

Line No. 39, from Ste. Catherine to Chicoutimi. This line is working well.

Line No. 41, from Malbaie to Ste. Agnes, working well.

Line No. 44, from Baie St. Paul to Petite Rivière St. François Xavier, good condition.

Line No. 45, from Ste. Anne to Lac Clair, in good condition.

Line No. 42, the line from Chicoutimi to St. Charles Borromée, 18 miles, with two loop lines, Shipshaw North, 2 miles, and St. Ambroise, 4 miles, was extended as far as Peribonka. This line is in good order.

The offices are distributed as follows:—

From St. Charles Borromée to Taché, 7 miles.

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From Taché to intersection of the road of St. Joseph d'Alma village, a loop line, 3 miles.

From intersection of road to St. Cœur de Marie, 5 miles.

From St. Cœur de Marie to Rivière à la Pipe, 6½ miles.

From Rivière à La Pipe to Honfleur, 8 miles. An office was opened there in charge of Mr. Charles Lindsay.

From Honfleur to Péribonka, distance 9 miles. Making a total length of 51½ miles. An office was opened at Peribonka in charge of Mr. Edouard Niquette, with the usual salary of \$50 a year, same for Mr. Lindsay.

The cost of this extension was \$1,720.61.

On line No. 13, from Quebec to Labrador, very important repairs were made by repairer Courbon. He reports that 46 miles of line were repaired. He has cleared a right of way ten feet wide, two bridges were repaired, one 130 feet long, and the other 63, the flooring was replaced, four other small bridges were also repaired, 60 posts were replaced. The three camps were also repaired and were well supplied with the necessary fuel to heat them during the winter.

In general the condition of the line is good.

#### CONSTRUCTION.

At the last session of parliament a sum of \$1,500 was voted towards the construction of a telegraph line from Baie St. Paul to St. Placide, in Charlevoix county, distance 8½ miles.

Work on this construction was started on September 30, and on November 11, 1908, I received instruction to discontinue work. This spring the line was completed and an office will be opened.

Cost of construction, \$771.24.

#### GENERAL REPAIRS AND GENERAL EXPENSES.

The shelter hut between St. Félix d'Otis and L'Anse St. Jean was completed, and a stable was constructed, cost \$208.46.

Cost of repairs between Tadousac, Ste. Catherine and Murray, and on the Portneuf-Bersimis section, \$1,636.20.

Repairs between Tadousac and Bergeronnes, \$76.

Paid P. A. Guay, of Chicoutimi, for repairing instruments, \$38.

For telephone services, \$35.

Material from Watson, Jack & Company, \$150.92.

Material from Mechanic Supply Company of Quebec, \$166.75.

Oilecloth for Chicoutimi office, \$19.20.

Sundries, \$203.42.

Installation of heating apparatus at Bersimis telegraph office, done by contract, Mr. Philippe Guay, of Chicoutimi, cost, \$1,033.70.

Other accounts in connection with the said building, \$116.95.

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## COST OF MAINTENANCE OF OFFICES.

April, 1908.. . . . .	\$ 791 98
May, 1908 . . . . .	803 95
June, 1908.. . . . .	768 86
July, 1908.. . . . .	837 85
August, 1908.. . . . .	840 53
September, 1908.. . . . .	836 19
October, 1908.. . . . .	834 58
November, 1908.. . . . .	772 54
December, 1908.. . . . .	739 44
January, 1909.. . . . .	807 63
February, 1909 . . . . .	814 66
March, 1909.. . . . .	781 67
<hr/>	
Making a total of.. . . . .	\$9,629 88
Including the other amounts mentioned above.. . . . .	6,176 45
<hr/>	
Making a grand total of.. . . . .	\$15,806 33

In conclusion, I draw your attention to the fact that the telephone lines on the government posts, are most of the time the cause of trouble on our telegraph lines, and something ought to be done to improve these conditions.

Hoping that you will find this report satisfactory,

I have the honour to be, sir,

Your obedient servant,

J. C. TACHE,

*District Superintendent.*

## REPORT No. 6

ST. JEAN, ISLE D'ORLEANS, April 12, 1909

D. H. KEELEY, Esq.,  
General Superintendent,  
Government Telegraph Service,  
Ottawa, Ont.

DEAR SIR,—I have the honour to submit my annual report upon the operation of the telegraph and telephone lines of the quarantine division of Grosse Ile, &c., under my charge for the year ending March 31, 1909.

With the exception of the cables connecting St. Francois, I.O., to Grosse Ile, all the telegraph and telephone cables, in my division were broken by the ice during the winter of 1908-9.

The telegraph cable between Ange Gardien and St. Pierre, I.O., was interrupted on May 11, 1908, and communication was temporarily re-established on the 12th of the same month.

The two telephone cables, at this place, being also broken I repaired them the same day.

The cables which were definitely repaired in the month of June required an addition of 150 feet to each, and they were solidly fixed in their respective places.

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The two cables from Ile aux Grues to Grosse Ile and to Montmagny were broken in December, 1907. The repairs were finished in July, 1908, requiring one mile of cable for that of Montmagny, this length being lost and impossible to find. About 300 feet were added to the cable from the north shore to Ile aux Grues. The cables were solidly fixed in deep trenches in November, 1908. The cable from Les Eboulements to Ile aux Coudres was broken in January, 1908. We used about 150 feet of cable for its repair which was done in June, 1908; this cable was again broken October 16 by the steamer *Rouville*; it was repaired on the 24th of the same month. We had to add about 150 feet of new cable.

The telephone line and the instruments on Ile aux Coudres were in very bad condition, and by special instructions, I made the necessary repairs in July, 1908, after which the line gave better satisfaction. The instruments on this circuit are of inferior quality, and having been in use a long time should be renewed. After all the above repairs were made the lines in my division gave excellent service.

On September 21, 1908, I sank a new cable, received from Halifax, between Ange-Gardien and St. Pierre, I.O., to take the place of one of the telephone cables which was in bad condition, and the one taken out was used to repair the remaining one. They were placed in security in the shoals. The work was completed on October 13, 1908. In October, 1908, three new telephones were installed on the circuit from Grosse-Ile to Montmagny, one at Doctor Martineau's, one at Miss Lagacé (telegraph office) and one at Mr. N. Lachaine (telegraph office), Ile aux Grues; these were connected with the Quebec line of the Bell Company via Montmagny. This line was not giving a satisfactory service during the night on account of the induction of electric light and wireless telegraph on Grosse Ile. I placed a second wire (metallic circuit) on Grosse Ile with a transformer at each end—one at Dr. Martineau's and one at the terminus of the cable at Ile aux Grues, on the eastern wharf of Grosse Ile. After, the service was very good until December 10 when the Montmagny cable was broken by the ice.

The circuit is alternative from Grosse Ile to Ile aux Grues, and either the telephone or telegraph may be used by means of switches which I placed at Miss Lagacé's and at Mr. N. Lachaine's.

As in the past years the land lines required considerable repairs. Twenty posts fell at St. Laurent and Ste. Petronille during the year 1908-9, and they were replaced with all possible haste.

The lines under my charge have given a fairly good service during the year. I remarked that the offices are better kept, and the agents are prompt to put into practice the instructions given them.

The details concerning the length of the lines, names of agents, salaries, &c., are absolutely the same as last year and you will find them in my report for 1907-8.

For reasons given in my precedent report, I beg to insist again for the acquisition of a suitable tug for the service of the telegraphic cables and lines under my charge.

The repairs of the cables and lines in my division during the year were as follows:—

Repairs to cables. . . . .	\$2,780 14
Repairs to the land lines. . . . .	850 00
	<hr/>
Total expended on repairs, 1908-9. . . . .	3,630 16
Salaries of agents and operators, 1908-9. . . . .	\$ 828 42

I have the honour to be, sir,

Your obedient servant,

J. P. POULIOT,

*District Superintendent.*



SESSIONAL PAPER No. 19

## REPORT No. 7.

LEAMINGTON, ONT., April 30, 1909.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraph Service.

Ottawa, Ont.

DEAR SIR.—In the matter of the Pelee Island telephone system for the term from March 31, 1908, to March 31, 1909, I beg to report as follows:—

1. The line on the island is in good order and repair with the exception of a short space near the north end lighthouse where we were obliged to use some trees as temporary poles owing to the washing out of several poles there during some of the heavy storms we had during the season. There is some dredging and dyking being done a short distance to the east of this portion which when completed would give a good location for poles on the dyke bank beyond the action of the waves during storms. In June I installed an instrument at A. Ouellette's grocery at the north end of the island about two miles west of north dock office. I have on hand three additional instruments authorized by the department to be placed as soon as possible at the following places, viz.: Dr. Pirettes residence, Dr. Van Epps residence, and the hotel, all on the west side of the island near the west dock. (These three instruments were placed on April 8 and 9, 1909).

2. The line on the mainland is in good working order, but several of the old poles will require to be replaced during this coming season. There are sufficient good cedar poles on hand for this purpose, but we will require a supply of side blocks. During the past season we were obliged to shift the location of the line from Leamington office to the cable landing near the Leamington dock so as to avoid trouble from induction of electric railway and electric light wires and as the old poles on that part of the line were too light and too much decayed we put up new poles with six pin cross arms from Leamington office to the cable landing and split the lines, placing the line to Pelee Island and Point Pelee branch from Leamington office on separate lines and making the line to the island metallic as far as the cable landing and the line to Point Pelee metallic from Leamington office and with new poles from the cable landing to Baird's office thereby considerably improving the service. In doing this work we were obliged to lengthen the line to avoid difficulties and trouble as much as possible so that the line from Leamington office to the cable landing is now about  $2\frac{1}{2}$  miles in length. For part of the distance, about 276 rods, Mr. James Bradford is to receive a rental of \$10 per year for the privilege of setting poles on one of his lines and driving along the line to inspect or repair when necessary.

3. As stated in my last report the cable was badly damaged by the ice packing and shoving during some heavy gales in the early part of February, 1908. We found when repairing in May and June last that all the damage was done in the deepest water. There were three complete breaks, the first being in the channel and the other two about two and four miles respectively north of the channel. The ice had reached down and dragged the cable in different directions according to the winds prevailing at the time so that we experienced considerable difficulty with some portions which were badly tangled up and there was one short piece which we could not find and were obliged to use part of the  $\frac{1}{2}$  knot shipped to us for that purpose by the department before we began the work of repair; we also had considerable rough weather while repairing that greatly hindered us in the work.

The cable has worked well since then and during the winter is now in good order and working satisfactorily.

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I herewith inclose list of officers or stations, operators or agents and rates of commission or salary with a summary of messages sent and received from March 31, 1908, to March 31, 1909.

Yours respectfully,

(Sgd.) JOHN McR. SELKIRK,  
*District Superintendent.*

REPORT No. 8.

QU'APPELLE, SASK., April 13, 1909.

D. H. KEELEY, Esq.,

Government Superintendent, Government Telegraph Service,  
Ottawa.

DEAR SIR,—I beg to submit herewith a report of the conditions of the Northwest lines to March 31, 1909, in continuance of last year's report.

I have not made a trip of inspection this spring, as I felt I could do so to much better advantage later on in the summer, when I could better determine the conditions prevailing and see more clearly what is required to put the line in good order. Prairie fires in the spring and summer, but more particularly in the spring, usually cause considerable damage, and it is too early in the year for these. The lines as a whole have been working very satisfactorily during the entire year and delays on business were very infrequent. What is known as the Lloydminster loop has given us the most trouble to keep in working order. As the country is being settled, which it is rapidly, many portions of our line, along its entire length, is being fenced in and where requests have been made to remove it, from the fields to the road allowance we have done so. I expect there will be a good amount of this work to be attended to the coming summer. There are also parts of our line where some of the poles are very old and rotten and will of necessity be renewed this season.

CONSTRUCTION AND REPAIRS.

A new office—dwelling building—was erected by the department at Fort Qu'Appelle during the year. This building is on the site of the old office, owned by the department. It is centrally located, is well built and comfortable. The property was also neatly fenced.

Battleford building was painted during the year, a fence built around the property; a porch erected and a part of the foundation which had broken was rebuilt.

South Humboldt buildings were painted and a fence built. This adds greatly to the appearance of the property, and the painting is a great protection to the buildings from the weather and will add to their permanency.

My last report showed the line in very bad condition for a stretch of 18 miles immediately east of Battleford. Lineman Dewan with a gang of men put in 24 days work on this section during last July, straightening it in some few places and putting in many new poles and resetting others.

In the town of Battleford we changed the entire line extending for a mile on either side of the office. We removed it from the main streets placing it in the lanes, putting in a superior class of poles to conform with the electric light and telephone poles now in use in that town. This was requested by the town council.

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The Lloydminster loop, 24 miles east of Pitt, has been a very difficult piece of line to keep in working order. Last year there was an appropriation made to have the loop rebuilt. The work was carried on until the weather got too severe. The loop was practically constructed except for the stringing of the wire. We hope with the completion of the new loop to avoid many interruptions which now take place owing to the old line having been built with poplar poles some six years ago, which are now very rotten. This line has been kept in as good repair as possible by Sub-Agent Mann, of Moose, who has been making periodical trips over it. Mr. Mann being located so far from this portion of the line, I have found it necessary on several occasions to send a man out from Lloydminster to make temporary repairs. There being no road along this route, travel was necessarily bad and slow. The new loop will follow the travelled roadway and will be easy of access should repairs be necessary.

We have also during the year put in a new and better class of poles in the town of Lloydminster similar in size to those used by the telephone service, at the request of the Lloydminster town council.

At Edmonton a number of changes were asked for by the city council. We received permission from the city telephone service to use their poles for stringing our wires on within the city limits, providing we would use a twin copper wire so as to take up as little amount of pole space as possible. This we did, thus coming within the regulations and meeting with their wishes in every respect. The total distance made new is about  $2\frac{1}{2}$  miles in length. These changes were suggested by the general inspector on his trip of inspection last year.

We have also put a set of telegraph instruments into the Griffin packing plant, which is located four miles out from our Edmonton office on the Athabaska Landing line. These are operated by a clerk in their office at their own expense, and all messages are checked in our Edmonton office. We get some business from them for our own line, but the bulk of it is for the Canadian Pacific Company, on which they pay us a small toll. The amount of business is fairly large. This office was cut in on January 1 last, and for the three months ending March 31, the Canadian Pacific Company<sup>1</sup> have paid us \$50.15 in tolls; while it does not overwork our agent.

An office was opened at Halfway Lake, a point about midway between Edmonton and Athabaska Landing, Miss C. Egge, agent. This office, though there is not much business done there, is considered a boon to the settlers in that district and to travellers generally, as the distance between Edmonton and Athabaska Landing is 100 miles, with no other office between these points. It is also a great convenience as a testing station. This office is operated on a commission basis.

An appropriation for the extension of our line from Athabaska Landing, 70 miles northward toward Peace river was made last year. Owing to the lateness of the season in getting this work started, we were unable to complete it. However we have the poles and material on the ground, 16 miles of holes dug and most of the right of way cleared, so that as soon as spring opens up we will be able to construct and complete the line in a short time. This line as it is continued northward will be of great value to the many settlers who have taken up their homes in the north country. Hundreds of people are going into this northern district every year.

## REQUIREMENTS FOR 1909-10.

Fort Qu'Appelle—Kutawa Section—About 100 poles will be required for this section and should be erected during the summer, as a number of those now doing duty are old and rotten and past use for resetting.

Kutawa—South Humboldt—will require considerable work this season for which we have sufficient poles at South Humboldt station.

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South Humboldt—Saskatoon Section.—We will require about 200 poles for this section to put it in good repair.

Onion Lake—Moose section—will need about 100 poles.

St. Paul des Metis—Saddle Lake.—Pakan section—will require to have a considerable number of poles reset and about 200 new poles put in place to put it in good condition.

MOOSEJAW—WOOD MOUNTAIN DIVISION.

This section has been kept in fair working order. Several short interruptions have taken place during the winter. There was an appropriation made last year for general repairs on this line; but owing to the poles that were ordered being late in arriving, we were not able to do any work on the line further than to have some of the poles hauled out to points on the line that would be handy for the repairer and the men on the line to work from.

Limerick.—This office was opened in October of 1908. It is in a rented building along with the post office. It is situated about half way between Moosejaw and Wood Mountain. There is a very scattered settlement in this district, which is rapidly filling up with a good class of settlers. It is a hardship to these settlers not to have any communication with the outside and they fully appreciate the opening of this office. In addition to this it will be of great assistance as a testing station. J. W. Wilson, agent.

BATOCHÉ—DUCK LAKE DIVISION.

This line has been kept in good working order during the year; but nearly all the poles are old and rotten and should be renewed. About 200 poles would be sufficient to put it in good repair for some years to come.

TELEPHONE LINES.

The several telephone lines constructed by the department in the Northwest are all in good order and working satisfactorily.

I have the honour to be, sir,

Your obedient servant,

ROBT. C. MACDONALD,  
*District Superintendent.*

REPORT No. 9.

EDMONTON, ALTA., May 25, 1909.

D. H. KEELEY, Esq.,  
General Superintendent,  
Ottawa.

DEAR SIR,—I beg to submit herewith a report covering the lines in my inspectorate, and bringing the report up to March 31 of the present year, as requested by you.

I have the honour to be, sir,

Your obedient servant,

J. S. MACDONALD,  
*General Inspector.*

## SESSIONAL PAPER No. 19

ANNUAL REPORT COMPLETED TO MARCH 31, 1909.

*Saskatchewan Division.*—Since the date of my last report, July 5, 1908, a building has been erected at Fort Qu'Appelle, combining an office and living rooms for the agent, at a cost of \$1,975, built on the site of the former office; it is centrally located, is well constructed, and very comfortable.

At South Humboldt a fence was built around the property, and the house and stable were painted, thus greatly improving their appearance; while at the same time protecting the buildings.

The Battleford buildings were treated in a similar manner, and some minor improvements made to the office.

A number of changes have been made on the pole line in various towns in accordance with the request of the town councils.

At Battleford, the old poles were taken down and replaced by new and larger ones, of the same grade as used for telephone and electric light purposes. The line was taken from the streets, placed in the lanes, and generally remodelled and improved.

At Lloydminster similar changes were made.

The city of Edmonton having requested us to remove the old poles from the streets, to replace them with a better class, and requiring a different route to be taken, permission was obtained from the provincial government to utilize their telephone poles within the city limits. This arrangement has proven entirely satisfactory, and has resulted in large saving to the service, as the expense of a new line would have been very great.

Considerable work was done on the line between Battleford and 18 miles east; a section which had been badly scorched by prairie fires, and it is again in good working order.

*New Construction.*—The work of reconstructing the Lloydminster loop along a new route was carried on as long as the weather permitted. The work was brought almost to completion, and can be finished in a short time this season, as soon as funds are available. As a large percentage of our entire wire troubles originate on this loop, because of the rotting poles, the new loop should greatly facilitate the handling of business.

## PEACE RIVER SECTION.

Poles for the first 70 miles north of Athabaska Landing have been delivered on the ground, as also the necessary side blocks for this distance. Contracts for a further 100 miles of poles have been awarded. The work of erecting poles and stringing wire will be proceeded with as soon as the frost is sufficiently out of the ground.

The usual number of poles will be required between Qu'Appelle and Pagan to replace those past service. Probably about 1,000 poles in all will be required this season. From Pagan to Edmonton the line is in good repair. This holds between Edmonton and Athabaska Landing also.

*Staff.*—No changes have taken place in the staff since my last report.

*New Offices.*—An office has been installed in the building of the Griffin Packing Company about four miles from Edmonton and connecting with our Edmonton office. The company pays all expenses of operating, and we receive from them considerable revenue.

## WOOD MOUNTAIN DIVISION.

Poles for needed repairs on this line were purchased last fall; but too late in the season to permit of being erected. About 150 poles were hauled out to convenient distributing points. There are about 250 poles now stored in Moosejaw, which will be available for this work.

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*New offices.*—The greatest number of homesteads taken up last year were in the district lying between Moosejaw and Wood Mountain. In order to accommodate the inrush of settlement, an office was opened at Limerick, midway between these points. Mr. J. W. Wilson, formerly lineman at Qu'Appelle, was appointed agent.

## KAMLOOPS-VERNON TELEPHONE.

*Kamloops-Louis Creek, 37½ miles.*—A new line just completed with five stations in operation.

## KAMLOOPS-LOWER NICOLA SECTION.

Some trouble has been experienced on this section during the past few months due to poles rotting. The poles on this section were reset four years ago, but are again rotting, and a large number will have to be replaced at an early date. Fir is chiefly used along the line, and this wood does not last as well as cedar or tamarac, although the use of a preservative on the butt gives it a much longer life.

*Nicola to Penticton.*—The original poles still in use, about one-third of the whole, on this section will require to be replaced at an early date.

*Penticton to Kelowna.*—This portion of the line is in excellent condition.

*Kelowna-Vernon.*—The work of taking the line from trees and placing it on poles, as also establishing a copper wire circuit between these two points, was not finished last fall. About six weeks time will be required to complete this work. As a large amount of business is transacted at points between Penticton and Vernon, this new circuit, when completed, will relieve the present congestion, and greatly facilitate business. All towns in the Okanagan valley are growing rapidly and I look for a continuous increase of business.

*Vernon to Lumby.*—This section is in good working order.

## SOUTHERN BRITISH COLUMBIA.

The following new lines have been constructed during the past season:—

Salt Spring telephone line, Hope Bay to North Pender.

Salt Spring telephone line, Hope Bay to South Pender.

North Pender to Mayne Island and Galiano Island, 32 miles, including two miles of cable.

Nanaimo to Gabriola Island, 19 miles, including one mile of cable. This line is completed, but is not being operated.

Victoria to Metchosin, 14 miles.

## TELEGRAPH LINE.

*Telegraph line.*—Courtney to Campbell river, 40 miles.

*Victoria-Cape Beale Line.*—The work done on this line the past season has resulted in a vast improvement in the working condition of the line. Further expenditure, however, will be necessary in order to place it in first-class condition, since, owing to the dense woods and the extremely heavy rainfall along the western coast, it is most difficult to protect the wires from grounds and heavy escapes.

*Golden-Windermere Line.*—The work in progress on this line at the time of my last report was continued until the appropriation was expended, resulting in a great improvement. Further re-polling will be necessary, as a large majority of the original poles are now rotten at the ground line.

## SESSIONAL PAPER No. 19

## REPORT No. 10.

VICTORIA, B.C., April 23, 1909.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraphs.  
Ottawa, Ont.

DEAR SIR,—I beg to submit the annual report of the telegraph and telephone lines under my charge for the year ending March 31, 1909.

*Victoria and Cape Beale Telegraph Line.*—The service on this line has given better satisfaction during the current year, than it has ever done before, mainly because of the improvements made on the trails, changing location of portions of the wire from the old to the new trails and the re-arrangement of the sections and appointments of three additional line repairers. As formerly, 'phones have been supplied to fish-trap companies, line repairers and patrolmen of the Marine and Fisheries Department. There are still several portions of the line west of Port Renfrew that will require to have the location changed, especially is this the case with the first thirteen miles, where at present the line runs on the north side of San Juan mountain where much trouble is experienced in winter from heavy falls of snow. The line should be moved from the north to the south side of the mountain necessitating the cutting of a new trail. This would not be any more expensive than making the old trail passable, the wire on this section is nearly rusted through in many places. The same applies to the next section to the west, and of course wherever the new trail of the Marine and Fisheries Department for life saving and aids to navigation is constructed, poles should be erected and new wire strung. The portion of the line from Victoria to Otter Point will require to be repoled and should be done early this summer.

*Alberni and Cape Beale Line.*—The Canadian Pacific Railway Telegraph Company line repairers maintain this line and have done so much better during the current year than on any previous year since they assumed its care.

*Alberni and Clayoquot Line.*—This line is very hard to maintain in working order in winter on account of the rough country, deep snow and windstorms which sweep in from the ocean through Barclay sound and Alberni canal, most of the work of the line has to be done from boats, a large portion of this line will require to be repoled at a very early date.

The portion between New Alberni and Franklin Creek is repaired by the C.P.R. Telegraph Company's linemen.

There being no business done at Mosquito Harbour on the Mosquito Harbour branch line on account of the cessation of work at the lumber mills at Mosquito Harbour. The maintenance of this portion is now carried on by the caretaker of the mills, until such time as a business develops from that point to warrant the upkeep by the government.

*Nanaimo and Comox Line.*—This line still continues to give great satisfaction, very seldom interrupted, and is now in very good condition with the exception of the portion that has to be repoled. Telephones have been installed in the line repairer's residence at Union Bay for the accommodation of the people on Denman and Hornby Island, in case of emergencies on Sundays or at night when the telegraph office is closed, also for his use in finding out the condition of his line. Also a phone for the use of Linemen Hudson and Mills at Big Qualicum, the north and south ends of their section for the same purposes. A phone has also been granted for the use of the construction party of the Cowichan-Alberni and Comox Railway. An extension of this line was constructed from Courtenay to Campbell river, a distance of 36 miles which is operated as a telephone line with offices at Oyster river and Campbell river and in the Courtenay hotel, Courtenay. The terminus of the line is at Comox, a dis-

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tance of four miles from Courtenay, for which a separate line was strung on the main line poles for that distance. Miss Bessie Macdonald, our agent at that point, also acting as our agent on the telephone line. This line has already proved a great source of satisfaction to settlers, sportsmen and general public in the district. So far any repairs that have been made have been made by one of the settlers on the line, and our line repairer, Mr. Thos. Hudson, has kept a general supervision over it, since its construction.

*Vancouver, Salt Spring, Pender, Mayne and Galiano Islands Line.*—This line was extended last year to North Pender island, offices being established at Browning Harbour and Hope Bay, this year the line was extended from Browning Harbour to South Pender island, offices being established at South Pender wharf and South Pender, also from Hope Bay to Clam Bay on North Pender where the cable crosses from North Pender to Mayne island, where offices were established at Village Bay, Mayne Island hotel and Point Comfort lighthouse. About halfway between Mayne island and Point Comfort lighthouse the cable crosses at the pass to Galiano island, where one office is established in Burrill Bros. store.

An office was also established at Beaver Point, Salt Spring island, near the cable landing and telephone connection was given the Bullman-Allison Lumber Company at Cushion Cove, who built about a mile and a half of line from the main line at a point halfway between South Salt Spring office and Beaver Point. All of the offices on this line are commission offices, repairs are executed when necessary by the following:—

Mr. E. Castley, Duncan.  
Mr. D. Chisholm, Chisholm.  
Mr. R. P. Edwards, South Salt Spring.  
Mr. G. J. Mowat, Ganges.  
Mr. H. Ruckles, Beaver Point.  
Mr. L. S. Higgs, South Pender.  
Mr. P. Garrett, Hope Bay.  
Mr. A. Deacon, Village Bay.

*Nanaimo and Gabriola Telephone Line.*—This line was constructed during January, February and March, and came to the centre, south and north ends of the island to give the various sections of the island this service. The line is run upon the British Columbia Telephone Company's poles for a distance of five miles from Nanaimo, thence to the cable landing, the cable being about three-quarters of a mile long. Phones have not yet been installed. Connection will be given to the British Columbia Telephone Company's long distance system at Nanaimo, the same as is provided for the Vancouver, Salt Springs, &c., island line at Duncan.

*Golden and Windermere Telephone Line.*—Poles have been reset on this line for a distance of 47 miles; owing to the severe frost and snow in the latter part of last year it was found impossible to complete the work, the balance of the poles should be reset this year.

This line was changed from a combined telegraph and telephone to a telephone line only on October 1, 1908, and the Golden office was transferred from the Canadian Pacific Railway Company's office to the store of Mr. J. A. Buckham, who was appointed agent. Mrs. Brehaut was appointed agent at Wilmer and Mr. G. E. Sanborn to continue as line repairer from Golden to Wilmer, the balance of the line to be repaired when necessary, and the actual cost of same paid for as it occurs. Mr. J. Lake, Athelmar, being appointed agent at that place on commission, the same as Mr. J. C. Pitts at Windermere.



## SESSIONAL PAPER No. 19

Attached herewith you will find a summary of miles of new lines constructed during the year. Total number of miles of line, &c., in operation March 31, 1909, list of employees on the various lines giving occupation and salary.

I have the honour to be, sir,

Your obedient servant,

WM. HENDERSON,

*Superintendent Government Telegraphs.*

## NEW LINES CONSTRUCTED.

	Miles Land line.	Miles cable.
Extension Vancouver Island and Salt Spring Island Telephone line to North and South Pender from Hope Bay North Pender to Mayne Island and Galiano Island .....	20	2
Nanaimo to north, south and centre of Gabriola Island. ....	18	1
Courtney—Campbell River. ....	40	
Victoria—Metchoin .....	14	

## TOTAL NUMBER OF MILES OF LINES, &amp;C., IN OPERATION TO MARCH 31, 1908.

	Miles.	Land lines.	Cable.	No. of Office.	No. of Operators.	No. of Line Repairers.	Messengers.
Victoria and Cape Beale....	118	118		6	6	8	1
Alberni .....	57	57		2	2	Repairs made by C.P.R.	
Alberni and Clayoquot main line.....	86 $\frac{5}{16}$	86 $\frac{5}{16}$		7	6	4 Government. 1 C.P.R. from New Alb. to French Ck.	
Alberni and Clayoquot Sec- hart Branch. ....	9	9					
Alberni and Clayoquot Mos- quito Harbour Branch. ....	10 $\frac{1}{2}$	10 $\frac{1}{2}$	$\frac{1}{2}$				
Nanaimo and Comox. ....	90	90		12	12	2	1
Parksville, Alberni Branch.	30	30				Repairs made by C.P.R.	
Nanaimo and Comox Union Bay, Dentman, Hornby Isd. Branch .....	18	11	7				
Courtney, Campbell R. ....	40	40					
Golden and Windermere. ....	90	90		4	5	1	
Vancouver Island and Salt Spring Island Pender, and Mayne and Galiano Island Telephone Line.....	67	60	7	6	16	On commission.	

WM. HENDERSON,

*Superintendent Telegraphs.*

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The following is a list of the employees on the various lines, giving positions and salary:—

	Position.	Office.	Salary.
			\$ cts.
Victoria and Cape Beale Line—			
William Dee	Agent operator	Victoria	100 00
J. Gordon McKay	Messenger	"	20 00
E. Milne	Agent operator	Sooke	Commission.
E. Gordon	Line repairer	Otter Point	60 00
K. Gordon	Agent operator	"	30 00
J. N. MacVicar	Actg. line repairer	Jordan River	60 00
C. T. Genmell	"	Slide Hill	60 00
Mrs. E. C. Williams	Agent operator	Port Renfrew	40 00
T. M. Baird	Line repairer	"	60 00
J. Martin	"	Camp Bay	60 00
W. P. Daykin	Agent operator	Carmanah	30 00
Jos. Murphy	Line repairer	Clo-oose	60 00
D. Logan	"	Darling	60 00
C. E. Mousley	"	Banfield	60 00
Mrs. Geo. Scott	Agent operator	Cape Beale	20 00
Alberni-Cape Beale—			
Mrs. Geo. Scott	"	Cape Beale	20 00
Mrs. P. A. Haslam	"	Alberni	10 00
Alberni-Clayoquot—			
Mrs. P. A. Haslam	"	Alberni	15 00
A. E. Waterhouse	"	New Alberni	Commission.
F. Tyler	Line repairer and agent	Uchucklesit	55 00
J. E. Hillier	"	Togwart	65 00
H. J. Hillier	"	Ucluelet	60 00
E. B. Garrard	"	Clayoquot	60 00
Nanaimo and Comox—			
A. M. Oliver	Agent operator	Nanaimo	75 00
W. Spencer	Messenger	"	20 00
P. Good	Agent operator	Nanoose	Commission.
J. G. McKay	Acting agent operator	Parksville	40 00
Wm. Mills	Line repairer	"	50 00
P. L. Crump	Agent operator	Little Qualicum	Commission.
A. Lockwood	"	" School	"
Wm. Keenan	"	Fanny Bay	"
J. McNeill	"	Union Bay	60 00
T. Hudson	Line repairer	"	75 00
T. H. Horne	Acting agent operator	Cumberland	40 00
Miss Bessie Macdonald	Agent operator	Comox	40 00
J. McPhee & Son	"	Courtenay	Commission.
John Johnson	"	"	Subscriber.
Walter Woodhus	"	Oyster River	Commission.
Valdes Logging Co.	"	Between Oyster and Campbell River	"
H. Hagstrom	"	Campbell River	"
Wesley Piercey	"	Denman Island	"
Thos. Chalmers	"	"	"
Thos. Smith	"	Hornby Island	"
Golden and Windermere Telephone Line—			
J. A. Buckham	Agent operator	Golden	40 00
G. E. Sanborn	Line repairer	"	50 00
J. Lake	Agent operator	Athelmar	Commission.
J. C. Pitts	"	Windermere	"
Mrs. J. E. Brehaut	"	Wilmer	40 00
List of subscribers—			
W. J. Barry			
H. L. McKay			
R. McKeenau			
H. Atchison			
J. N. Black			
T. R. Haddon			
Jas. Henderson			

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## List of the employees, &amp;c.—Continued.

	Position.	Office.	Salary.
List of subscribers—Con.			\$ cts.
A. C. Hamilton .....			
B. Ashton .....			
H. A. Stark .....			
J. E. Griffiths .....			
Thos. King .....			
H. G. Parsons, Limited .....			
C. A. Warren .....			
Columbia House ..			
Thos. O'Brien (estate) .....			
H. G. Low .....			
J. Cartwright .....			
Vancouver Island and Salt Spring Island Line—			
E. Castley .....	Agent operator .....	Duncans .....	Commission.
T. Aitken .....	" .....	Maple Bay .....	"
J. Chisholm .....	" .....	Chisholm .....	"
R. P. Edwards .....	" .....	South Salt Spring .....	"
H. Ruckles ..	" .....	Beaver Point .....	"
Bullman-Allison L. Co. ....	" .....	Cushion Cove .....	"
G. J. Mowat & Co. ....	" .....	Ganges .....	"
U. S. Higgs .....	" .....	South Pender .....	"
A. R. Spalding .....	" .....	" Wharf .....	"
W. Brackett .....	" .....	Browning Harbour .....	"
J. Auchterlonie .....	" .....	Hope Bay .....	"
A. A. Davidson .....	" .....	Clam Bay .....	"
A. Deacon .....	" .....	Village Bay .....	"
C. J. Macdonald .....	" .....	Mayne Island Hotel .....	"
G. Georgeson .....	" .....	Point Comfort Lighthouse .....	"
Burrill Bros .....	" .....	Galiano Island .....	"
Nanaimo and Gabriola Island Line—			
Line completed. Not yet being operated.			

WM. HENDERSON,  
Superintendent Telegraphs.

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## REPORT No. 11.

SUMMERLAND, B.C., May 1, 1909.

D. H. KEELEY, Esq.,  
General Superintendent,  
Ottawa, Ont.

DEAR SIR,—In compliance with your request, I have the honour to give report covering the lines under my jurisdiction, from my last report up to and including March 31, 1909.

In as much as my last report covered up to December 31, 1908, there is very little to report at this time.

Kamloops to Louis Creek section being new, is in good repair, and likely to be so for some years yet.

Kamloops to Nicola section, where poles were reset four years ago, is showing indications of decay, which may mean, the resetting of the poles again next year. On the first opportunity, I will have my foreman make an examination of this section, and report on its needs.

Nicola to Lower Nicola section, as previously reported, will require to be repoled this year.

Nicola to Hedley, and Hedley to Penticton sections. You will remember these two sections when first constructed were constructed by using trees over a considerable portion of the way. My foreman, Mr. Woodburn, reports that the poles used at that time were very small in size, and are fast decaying, and will probably have to be replaced next year. No preservative was used on the butts of these poles when placed in the ground.

Penticton to Kelowna section. This was the first section built under my superintendency. Preservatives were used on the butts of the poles on this section, and to all appearances, the line is almost as good as new.

Kelowna to Vernon section. The work began in the late fall, to place poles where trees were used, and to string a new copper circuit, was discontinued January 1, 1909, and will require about six weeks to complete, after I am advised of funds being available for so doing.

Vernon to Lumby. This line is in good condition, and requires no attention.

*Revenue.*—From the standpoint of revenue, taking the whole system under my jurisdiction into consideration, it cannot be said to be very discouraging, but this is largely due to the heavy business done from Hedley, north, to Vernon, particularly that portion which traverses the Okanagan valley. If local exchanges are installed at Merritt and Princeton, there should be a change in these two districts.

*New Work or Extensions.*—No new work or extensions have been undertaken since my last report.

Faithfully yours,

CHAS. S. STEVENS,  
*Superintendent.*

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## REPORT No. 12.

VANCOUVER, B.C., July 28, 1909.

D. H. KEELEY, Esq.,  
General Superintendent,  
Ottawa, Ont.

DEAR SIR,—I beg to submit my annual report, covering the operations of the Yukon telegraphs, for the fiscal year 1908-9.

*Main Line—Ashcroft, B.C., to International Boundary, beyond Dawson, Y.T.*—During the past year, interruptions on the main line were infrequent, and, in nearly every case, repairs were made within a few hours, so that there was little or no delay to business. The work of the general repair gangs during the preceding summer, in widening the right of way, and falling menacing timber, in the mountain sections north of Hazelton, had the desired effect in reducing the number of breaks from falling timber, especially during the winter months. Repoling of that portion of the line between 150-Mile House and Quesnel, along the Cariboo wagon road, was begun in July and completed in September. Two gangs were employed on the work—one working north from 150-Mile House to Quesnel, and the other working south from Quesnel, as it was found that a larger number of poles than at first was anticipated, required resetting, and the season during which pole resetting could be done to advantage, closes early in September. The work done by these gangs was of a very satisfactory nature, and that portion of the line is now in excellent condition. Telephones were installed at Clinton and 83-Mile House, and an office opened at the latter point. These telephones are attached to No. 1 (or the local telegraph wire along the Cariboo road) and do not affect No. 2, the Dawson wire.

*Hazelton-Prince Rupert and Port Simpson Branch.*—Railway construction on the Grand Trunk Pacific from Prince Rupert, eastward for one hundred miles, began in May, and, as the railway parallels the telegraph line, and, in some places, usurps our right of way, innumerable interruptions were of daily occurrence during the months of June, July and August, mainly due to the clearing of timber for the one hundred foot wide railway right of way. As the telegraph line and railway follow the base of heavy timbered bluffs for great distances, and, as the fisheries regulations prohibited the contractors from falling the timber into the river, the line was in places completely destroyed. Although extra linemen were placed in railway camps, in some cases only two miles apart, they could not keep pace with the interruptions, and every expedient was resorted to to keep the business moving. Four new telegraph offices were also installed at intermediate points to facilitate the locating of breaks, confining the movements of the linemen to the sections affected. In some places, where bald mountains rise sheer from the water, iron rods were used, and the line placed as far as possible out of the line of danger, but blasting operations later caused further damage, and this is still of daily occurrence at one point or another, along that portion of the line. As it was anticipated that railway construction would cause us trouble, a general repair gang was started from Hazelton on the opening of navigation in May, and the line reconstructed its entire length, and, where possible, the line was diverted to escape damage from railway construction work. After the line had been reconstructed, and the greater part of the timber clearing completed, interruptions were reduced to a minimum. Traffic on this branch has increased at a rapid rate, and, a much greater and continued increase is looked for, especially at Prince Rupert, when the townsite at that point is placed on the market.

*Horefly Branch (150-Mile House to Quesnel Forks).*—The closing down of the Guggenheim mines at Bullion has caused a decrease in the earnings of this branch, but the belief is expressed that the work will be resumed in the near future, when

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Bullion office will be reopened, and the telegraph business show a decided increase.

The line will require considerable repair next season, as a great many of the poles are showing signs of decay, and the majority of them will require to be reset or renewed.

*Lillooet Branch (Hat Creek to Lillooet, B.C.)*—This line is in good order, and the business for the past year compares favourably with that of former years.

*Barkerville Branch (Quesnel to Barkerville, B.C.)*—This line is also in good order.

During the year, telephone offices were established at Locks, Cottonwood, Wingdam and Stanley, which increased the revenue of the line and gave great satisfaction to the public in this district.

I have the honour to be, sir,

Your obedient servant,

J. T. PHELAN,  
*Superintendent.*

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## REPORT No. 13.

NORTH SYDNEY, N.S., March 31, 1909.

D. H. KEELEY, Esq.,  
General Superintendent, Government Telegraphs,  
Ottawa, Ont.

DEAR SIR,—Below is a statement of the cable handled by the C.G.S. *Tyrian* during the season of 1908:—

## DEEP SEA.

	Knots.	Knots.
Left in tanks from 1907.. . . . .		23.00
Sent to Ontario by rail.. . . . .	2.00	
June 13—		
Picked up, repairing St. Paul Island cable.. . . .	.	2.75
Laid down, repairing St. Paul Island cable.. . . .	6.18	
June 27—		
Laid down, repairing Scatarie cable.. . . . .	2.84	
September 4—		
Sent to Island of Orleans, Que.. . . . .	1.00	
October 23—		
Sent to British Columbia by rail.. . . . .	5.75	
Left in tanks.. . . . .	7.98	
	<hr/>	<hr/>
Total.. . . . .	25.75	25.75
	<hr/>	<hr/>

## SHORE END.

	Knots.	Knots.
In tank from 1907.. . . . .	.	.59
June 27—		
Picked up at Scatarie Island.. . . . .	.	1.00
Laid down at Scatarie Island.. . . . .	.50	
October 23—		
Left in tank.. . . . .	1.07	
	<hr/>	<hr/>
Total.. . . . .	1.57	1.57
	<hr/>	<hr/>

Respectfully submitted,

(Sgd.) A. B. McDONALD,  
*Electrician.*





PART VI

REPORT OF THE COLLECTOR OF REVENUE

DEPARTMENT OF PUBLIC WORKS

1908-1909



DEPARTMENT OF PUBLIC WORKS,  
COLLECTION OF REVENUE,

OTTAWA, June 2, 1909.

N. TESSIER, Esq.,  
Secretary, Department of Public Works,  
Ottawa, Ont.

SIR,—I have the honour of submitting my report for the twelve months ended March 31, 1909.

Other pressing duties requiring my attention, I regret that I have been unable to examine, as usual, the books and accounts of the officers under my control.

During the twelve months just closed the revenue accrued from public works shows a decrease of \$12,691.81, being \$162,525.28, while for the previous year it was \$175,217.09.

The collections show a decrease of \$6,695.27, being \$160,363.06, while in the preceding year they amounted to \$167,058.33.

The revenue accrued from slides and booms was \$77,771.11, or \$16,522.42 less than for year ended March 31, 1908.

The collections were \$76,455.41, or \$10,305.26 less than the previous year.

The outstanding uncollected revenue was decreased by \$207.06.

The graving docks yielded \$60,505.16, or \$2,703.42 less than in 1907-8.

Rents collected amounted to \$23,268.44, an increase of \$6,179.36.

One hundred and thirty-four dollars and five cents wharfage at North Bay, Pelee Island, was also collected.

Having dealt with the revenue in a general way, I now submit the particulars in detail, relative to the several services under their respective head.

## SLIDES AND BOOMS

## OTTAWA DISTRICT.

The tolls charged up amounted to \$40,390.99, \$4,759.47 less than in 1907-8.

The number of sawlogs that passed through the works was 4,026,487 pieces, or 460,674 pieces less than the previous year.

The falling off in the revenue compared with the previous year was largely attributable to the large quantity hung up in consequence of the unprecedentedly low water.

Of square timber there were only 3,296 pieces. There were none whatever in 1907-8.

All the revenue accrued in this district during the twelve months to March 31 last was collected except \$2,370.15.

Of the dues accrued since July 1, 1889, when this department took over the collection, there remains uncollected \$13,667.90, full particulars of which will be found in statement No. 2 herewith.

Of the dues accrued before July 1, 1889, there still remains \$56,805.65, all of which should be written off. See statements Nos. 1 and 3 herewith, for particulars.

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The accounts for the Ottawa district stand thus:—

Dues accrued during year to March 31, 1909.. . . .	\$40,390 99
Of which there has been collected.. . . .	38,020 84
Dues of 1907-8 collected 1908-9.. . . .	2,389 32
Dues accrued prior to the collection being transferred to this department July 1, 1889.. . . .	56,805 65

Dues of—

1889-90.. . . .	\$ 6,903 05
1890-1.. . . .	28 42
1892-3.. . . .	379 80
1896-7.. . . .	196 71
1903-4.. . . .	637 37
1907-8.. . . .	3,152 40
1908-9.. . . .	2,370 15

---

\$13,667 90

Of the dues accrued since this department assumed the collections, \$1,014,961.76, all but \$95.83, absolutely coming to this department has been collected, the remainder being items disputed and awaiting departmental action.

The increases and decreases from the different works, as compared with 1907-8, were as follows:—

Increases—

Main Ottawa.. . . .	..\$ 512 66
Petawawa.. . . .	515 22
Madawaska.. . . .	715 21

Decreases—

Chenaux Boom.. . . .	254 15
Coulonge.. . . .	3,988 53
Dumoine.. . . .	111 15
Black River.. . . .	1,453 35
Gatineau.. . . .	695 28

Reverting to the matter of the number of pieces of saw logs being smaller this year than last—I may say that a large quantity of small spruce, formerly classed as saw logs in the returns, being now manufactured into pulp, is dealt with and charged by the cord of 115 cubic feet computed on the cubic contents of each piece.

Herewith are statements in detail:—

- No. 1.—Statement of amounts outstanding prior to July 1, 1889, uncollected, March 31, 1909.
- No. 2.—Statement of dues accrued at Ottawa since July 1, 1889, uncollected March 31, 1909.
- No. 3.—Statement of amounts accrued at Quebec prior to July 1, 1889, uncollected March 31, 1909.
- No. 4.—Statement of the number of pieces of square timber saw logs, &c., which passed through the Ottawa works during the year ended March 31, 1909.
- No. 5.—Statement of Dues accrued from each of the slides and work in in the Ottawa district, during the year ended March 31, 1909.

#### ST. MAURICE DISTRICT.

The revenue from this district was \$34,365.86 being \$11,062.35 less than in 1907-8, which was the largest in the history of these works.

The revenue of 1908-9, \$34,365.86 was all collected.

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The number of pieces of all kinds of timber that passed through the works was equivalent to 3,634,188 saw and pulp logs.

Since I took charge of this district in 1892 all the revenue has been collected.

The amount outstanding prior to July 1, 1892, remains at the same figure, viz.—\$14,486.49, and should be written off—for reasons assigned in statement No. 6 herewith.

The falling off in the quantity of logs during the past year was partially due to low water and in a measure to many logs being hung up in consequence of the reduced demand for pulpwood. I anticipate a large increase in the revenue this year as it is said there are about 7,000,000 logs to come, the St. Maurice being very low at the opening of navigation, the booms at Three Rivers were in position in good time and not one log was lost.

I venture to repeat that the alligator tugs continue to give great satisfaction, and it is daily being realized what an advantage it is to have the aid of these machines, in fact I may make bold to say that it would be next to impossible to handle the immense number of logs now coming down this river without them.

I have for several years urged the adoption of a system of water storage on the tributaries of the St. Maurice, and I have much pleasure in stating that the lumbermen have taken this matter into their own hands. One dam has been erected on the Manouan to be supplemented later on as the company may find necessary or useful.

The establishment of this system would not be beneficial only to the lumbermen, it is a great help to the interest of the government, in the first place, the safe conveyance of the timber to the mills, means a good revenue and secondly holding back the waters, as proposed, in the spring will tend largely to prevent such freshets as have occurred in the current year or as on one occasion when all the works in the river were swept away by the flood. The experience of this season has demonstrated the necessity for raising the piers at Grandes Piles and Pointe à Bernard above the Shawenegan Falls, at which place there should be also at least two new piers erected during the current year. With these improvements the works would be in a condition to retain the immense number of logs now coming down the St. Maurice, with almost certain safety.

## NEWCASTLE DISTRICT.

The dues accrued from this district amounted to \$1,480.96, all of which was collected; decrease, \$432.90.

The tolls outstanding on March 31, 1909, amounted to \$3,556.89 of which \$3,521.19 should be written off in accordance with a judgment of the Exchequer Court, the remainder, \$35.70, will also have to be written off, the debtor being a very old man and hopelessly insolvent.

Full particulars of amount outstanding will be found in Statement No. 7, herewith.

The reduction in the revenue has been caused mostly by the timber country owned by the largest operator having been nearly all cut over for pine, in fact the current season will probably be the last of this concerns working in these waters.

## SAGUENAY DISTRICT.

The revenue accrued during the past fiscal term was \$1,533.30. None of which has yet been collected. The total uncollected to date being \$5,624.82.

The Chicoutimi Pulp Company are under contract with the department to contribute any deficiency which may occur between the cost of maintenance and the amount realized from tolls on timber passing through the Saguenay. An effort is now being made to enforce this contract.

The company however dispute their liability on the ground that the boom was not completed till late in the season of 1906 and that the boom was not in the proper place.

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There is also a counter claim for timber lost through the boom not being ready when expected, thus the timber passed down the river and was a total loss to the owner. The amount involved, however, is but \$56.57, and the quantity of timber so lost was over 800 pieces of 20 feet and upwards in length.

Statement No. 8, herewith shows the particulars of the revenue from this district.

## GRAVING DOCKS.

## ESQUIMALT GRAVING DOCK.

The revenue from this service was \$20,583.36, being \$9,176.84 less than the previous year, which was the largest in the history of the dock. Of the 158 days the dock was used during the year, it was occupied for only 19 days by H.M. vessels,

## LEVIS GRAVING DOCK.

The revenue was \$4,875.47 more than for the year 1907-8, being \$29,227.96. See statement No. 10.

During the season of navigation of 1908 the dock was occupied for 260 days by 26 vessels of 43,162½ tons.

During the winter of 1908-9 ss. *Campana*, *Lady Evelyn*, dredge *Progress* and tugs *Monitor* and *Storm King*.

## KINGSTON GRAVING DOCK.

This dock was occupied for 241 days, including winter months. The income for the year was \$10,693.84, or \$1,597.95 more than in 1907-8. See statement No. 11.

The steamer *Bickerdike*, dredge *Sir Richard*, and barge *Ungava* occupied the dock during the winter of 1908-9.

## RENTS.

The rents accrued during the fiscal year amounted to \$24,114.97, being \$6,399.99 more than for 1907-8.

On April 1, 1908, there was \$611.40 outstanding from the previous year, making a total of \$24,726.37 collectable during the year just closed. Of this \$23,268.44 was collected, \$273.43 written off in lieu of repairs, and on account of poverty, leaving \$1,184.50 uncollected on March 31 last.

Of the amount uncollected, about one-fifth is covered by a counter claim for improvements or repairs and most of the remainder will likely be paid. Some few of those indebted are poor people who were in possession when the properties came to us, who have necessarily been treated leniently. The properties this class occupies are mostly old buildings in bad condition from which very little revenue could be expected.

The work of this office has been very much increased in securing the rents from the properties lately acquired by the government on Sussex street and McKenzie avenue. This branch of our business requires much time, in investigating claims for remission on many grounds and claims for repairs or privileges said to have been promised by the previous owner.

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The collections on this account were as follows:—

Property or Privilege Rented.	Collected.
Old P. O. building, Victoria, B.C. . . . .	\$ 4,212 00
Sussex street property, Ottawa, Ont. . . . .	15,089 96
Examining warehouse site, Montreal, Que. . . . .	2,227 48
Portion Kingston graving dock premises. . . . .	250 00
Pt. Reserve, Victoria Island, Ottawa. . . . .	2 00
Reserve, east side St. Maurice river. . . . .	50 00
Postal station site, Montreal. . . . .	289 50
Privilege of erecting towers in Burlington Beach. . . . .	1 00
Island and waterpower, Calumet channel, P.Q. . . . .	25 00
Pt. Reserve, Pond Creek, P.Q. . . . .	1 00
Pt. Reserve, west side Black river, P.Q. . . . .	25 00
Ile Caron, P.Q. . . . .	75 00
Land in Ottawa, Ont. . . . .	1 00
Land on Columbia and Begbie streets, Westminster, B.C. . . . .	100 00
Sand privileges, Burlington Beach canal. . . . .	100 00
Old Government House, Yale, B.C. . . . .	5 00
Privilege water pipe connection, William Head, B.C. . . . .	12 00
Portion immigration building, Port Arthur, Ont. . . . .	100 50
Examining warehouse site, Vancouver, B.C. . . . .	700 00
Kingston, piece of land on Clarence street. . . . .	1 00
Privilege of laying tracks on bridge near Edmonton. . . . .	1 00

\$23,268 44

The following comparative table of Public Works Revenue accrued during the year ended March 31, 1909, compared with that of the fiscal year ended March 31, 1908, shows at a glance in what accounts increases and decreases herein reported have occurred:—

	Year ended March 31, 1909.	Year ended March 31, 1908.	Increase, 1909.	Decrease, 1909.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<b>SLIDES AND BOOMS.</b>				
Ottawa District. . . . .	40,390 99	45,150 46		4,759 47
St. Maurice District. . . . .	34,365 86	45,428 21		11,062 35
Newcastle District . . . . .	1,480 96	1,513 86		432 90
Saguenay District. . . . .	1,533 30	1,801 00		267 70
	77,771 11	94,293 53		16,522 42
<b>GRAVING DOCKS.</b>				
Esquimalt, B.C. . . . .	20,583 36	29,760 20		9,176 84
Kingston, Ont. . . . .	10,693 84	9,095 89	1,597 95	
Levis, Que. . . . .	29,227 96	24,352 49	4,875 47	
	60,505 16	63,208 58	6,473 42	9,176 84
Net decrease, 1909, \$2,703.42.				
Rents . . . . .	24,114 97	17,714 98	6,399 99	
<b>WHARFAGE.</b>				
North Bay, Pelee Island. . . . .	134 05		134 05	

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In conclusion I have to acknowledge the uniform courtesy and cheerful assistance accorded me at all times by the officers with whom I have been brought in contact during the year.

I have the honour to be, sir,

Your obedient servant,

EDW. T. SMITH.



## SESSIONAL PAPER No. 19

No. 1.—STATEMENT of Slidage and Boomage from the Ottawa Slides and Works, accrued prior to July 1, 1889, Outstanding March 31, 1909.

By whom due.	Rad and Doubtful Debts.	Chaudiere Boomage in Suspense.	Other Slide and Boom Dues Disputed.	Total Outstanding on Sept. 30, 1902.	Year to which Dues belong.	Remarks.
John & Wm. McLean	\$ c.	\$ c.	\$ c.	\$ c.	1873	Insolvent.
John Rowan	53 14	...	...	53 14	1873	"
Lemieux & Charette	342 50	...	...	342 50	1872-1873	"
Tailion & Lapiere	21 30	...	...	21 30	1873	"
Mongrove & McHarry	148 10	...	...	148 10	1873-1874	"
W. C. Wells	291 42	...	...	291 42	1873-1874	"
Dufresne & McGarity	690 90	...	...	690 90	1873-1874	"
Walton Smith	528 80	...	...	528 80	1874-1875	"
A. H. Baldwin	171 46	...	...	171 46	1874-1875	"
Hon. James Skend	3,507 92	...	...	3,507 92	1871 to 1874	"
	9,807 65	...	...	9,807 65	1861-1863, 1864, 1869, 1875 to 1878	"
Batson & Carrier	5,558 70	...	...	5,558 70	1875 to 1877	"
A. F. A. Knight	546 30	...	...	546 30	1878	"
James Walker	11 25	...	...	11 25	1877	"
R. Campbell & Son	1,558 50	...	...	1,558 50	1879 to 1881	"
James G. Bryson	73 60	...	...	73 60	1886	"
Costello Bros.	96 62	...	...	96 62	1882	"
N. E. Cornier	428 34	...	...	428 34	1885	"
James Yohill	9 29	...	...	9 29	1876	Overcharge.
J. & B. Grier	76 84	...	...	76 84	1883	"
R. & W. Conroy	95 42	...	...	95 42	1882-1883	"
A. P. White	101 00	...	...	101 00	1881	"
B. Caldwell & Son	4 35	...	...	4 35	1887	"
J. R. Booth	9,871 92	398 88	...	10,270 81	1881 to 1888	"
Perlev & Pattee	8,889 85	...	...	8,889 85	1881 to 1888	"
The Bronson & Weston Lumber Co.	8,180 79	...	...	8,180 79	1881 to 1888	"
Pierce & Co	462 18	...	...	462 18	1888	"
G. A. Grier & Co	1,059 59	...	...	1,059 59	1886-1887	"
Estate late Levi Young	1,461 20	...	...	1,461 20	1881 to 1885	"
Wm. Mason	413 85	...	...	413 85	1881 to 1888	"
Gilmour & Co.	406 27	...	...	406 27	1884	"
John Rochester	258 88	...	...	258 88	1881 to 1883	"
J. & G. Bryson	252 20	...	...	252 20	1886	"
	23,997 28	31,006 54	651 08	55,653 90		Counter claim for damages by breaking of Chaudiere Works.

\$396.88, counter claim for damages by the breaking of Chaudiere Boom.

\*Chaudiere boomage. These parties claim that they have maintained these works wholly at their own expense since 1881.

Counter claim for damages by breaking of Chaudiere Works.

EDWARD T. SMITH,  
Collector of Slidage and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, July 15, 1908.

9-10 EDWARD VII., A. 1910

No. 2.—STATEMENT of Slide and Boom Dues accrued from the Ottawa River Works, since July 1, 1889, Outstanding on March 31, 1909.

Name.	Year to which Dues belong.	Chaudiere Boomage in Suspense.	Cheneaux Boomage.	Ordinary Dues.	Total.	Remarks.
J. R. Booth.	1889-90	\$ 2,561 69	\$ cts.	\$ cts.	\$ cts.	
The Bronson & Weston Lumber Co.	1889-90	2,666 96	.....	.....	2,561 69	
Perley & Pattee.	1889-90	1,203 36	.....	.....	2,666 96	Chaudiere boomage reported to Council and referred to Treasury Board, should be written off.
Wm. Mason & Sons.	1889-90	167 66	.....	.....	1,203 36	
Pierce & Co.	1889-90	913 48	.....	.....	167 66	
Alex. Fraser, acct. Thos. Stephens.	1890-91	.....	.....	28 42	913 48	Legal action taken to recover this.
J. R. Booth.	1892-93	.....	.....	379 80	28 42	Retained by Mr. Booth in settlement of account due him, which the Auditor General refused to pay as Mr. Booth appeared to be in arrears in this and Statement No. 1
Bryson & Fraser.	1896	.....	.....	196 71	379 80	Have counter claim for work done on slide to this amount.
J. R. Booth	1903	.....	.....	339 27	196 71	Petawawa slideage disputed.
Hawkesbury Lumber Co.	1903	.....	.....	298 10	339 27	"
Hawkesbury Lumber Co.	1907	.....	743 32	.....	298 10	"
J. R. Booth	1907-08	.....	3,315 15	.....	743 32	Claim for reduction before the department.
Shepard & Morse Lumber Co.	1907	.....	434 56	.....	3,315 15	"
Estate late R. Hurdman.	1907	.....	62 11	.....	434 56	"
Low Lumber Co.	1908	.....	.....	67 41	62 11	"
		6,903 05	4,555 14	1,309 71	67 41	
					13,667 90	

EDW. T. SMITH,  
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, July 15, 1909.

## SESSIONAL PAPER No. 19

No. 3.—STATEMENT of Outstanding Slide Dues, Ottawa District, Bonds for which were sent to Quebec for Collection.

Name.	From 1860.	From 1861.	Total.
	\$ cts.	\$ cts.	\$ cts.
Hon. James Skead . . . . .	245 00	210 00	455 00
James Mair. . . . .	696 75	696 75	696 75
	245 00	906 75	1,151 75

These amounts were uncollected, as the parties claimed damages for loss caused by the Madawaska boom breaking in 1860.

A decision on their claims was not arrived at till August 2, 1869. On the 5th idem, Messrs. Skead and Mair were notified that the department could not recognize their claim.

To the best of my knowledge, this decision was never communicated to the Collector of Slide Dues; consequently, these accounts remained in abeyance.

Since then, both parties died, and I believe both were insolvent at the time of their death.

EDW. T. SMITH,

*Collector of Slide and Boom Dues.*

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, June 2, 1909.

No. 4.—STATEMENT of the Number of Pieces of Square Timber, Saw Logs, &c., that passed through the government slides and works on the River Ottawa and its Tributaries during the Fiscal Year ended March 31, 1909.

	Pieces.
Square timber. . . . .	3,296
Saw logs. . . . .	4,026,487
Boom and dimension timber. . . . .	61,529
Cedars. . . . .	89,932
Railroad ties. . . . .	558,379
Fence posts. . . . .	74,435
	4,814,058

Also 60,190 $\frac{1}{10}$  cords pulp wood.

The revenue accrued on the above was \$40,390.99.

EDW. T. SMITH,

*Collector of Public Works Revenue.*

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, June 2, 1909.

9-10 EDWARD VII., A. 1910

No. 5.—STATEMENT Showing the Dues accrued on the Undermentioned Works on the River Ottawa and its Tributaries during the Fiscal Year ended March 31, 1909.

River or other Improvement.	Amount.
Main Ottawa.. . . .	\$ 2,719 58
Chenaux boom.. . . .	6,431 41
River Petawawa.. . . .	14,829 05
Madawaska.. . . .	1,189 33
Coulonge.. . . .	3,660 83
Dumoine.. . . .	62 03
Black River.. . . .	4,543 26
Gatineau.. . . .	6,955 50
	<hr/>
	\$40,390 99

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, June 2, 1909.

EDW. T. SMITH,  
*Collector of Public Works Revenue.*

No. 6.—STATEMENT of Slide and Boom Dues from the St. Maurice Slides and Works outstanding on March 31, 1909.

Name.	Year to which Dues belong.	Amount.	Total.	Remarks.
		\$ cts.	\$ cts.	
George Baptist, Son & Co.	1878	469 95		
"	1879	2,110 62		
"	1880	1,696 18		
"	1881	293 69		
"	1882	163 80		
"	1884	118 50		
"	1888	4 28		
			4,859 02	Have counter claims for damages to loss caused by the booms not being stretched early enough in the spring of 1878 to prevent the logs going over the chutes.
Ross, Ritchie & Co. ....	1878	3,072 84		
"	1883	2,173 68		
"	1884	28 96		
"	1886	1 62		
"	1887	4 38		
			5,281 48	The claims were submitted to Special Commissioner, Mr. McDougall, afterwards Judge, who, after hearing the evidence on both sides, recommended that the claims of the parties should be allowed.
Alex. Baptist. ....	1879		2,116 96	
Wm. Ritchie & Co. ....	1888	779 24		
"	1889	332 11		
			1,111 35	Of this amount \$754.20 is claimed to be an overcharge. Insolvent.
Ritchie Bros. ....	1886	413 43		
"	1887	634 71		
			1,048 14	This amount is composed of overcharges in 1886 and 1887 of \$442.76 and overpayment in 1884 of \$205.38.
G. B. Hall. ....	1890		49 34	Insolvent.
T. E. Normand, . . . .	1890		42 28	Claims that this balance is an overcharge.
Trefflé Biron . . . . .	1891		6 92	Would cost more to collect than it is worth.
			<hr/>	
			*14,481 49	

\* To make this balance agree with the Public Accounts, there should be deducted \$7.33 over credited Alex. Baptist, and \$217.17 added thereto, being \$190.40 paid July 23, 1884, and \$26.77 overcharged in error to Wm. Little, not in any of the collector's returns, which will give balance due September 30, 1894, of \$14,690.73.

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, June 2, 1909.

EDW. T. SMITH,  
*Collector of Public Works Revenue.*

## SESSIONAL PAPER No. 19

## No. 7.—STATEMENT of Slides and Boom Dues accrued from the Newcastle and Trent River Works, remaining uncollected March 31, 1909.

Name.	Year to which Dues belong.	Amounts disputed.	Ordinary Dues.	Total.	Remarks.
		\$ cts.	\$ cts.	\$ cts.	
Irwin & Boyd .....	1881 .....	59 79	.....	59 79	Insolvent.
Thomson & McArthur..	1880 .....	52 78	.....	52 78	
Jabez Thurston .....	1882 .....	12 50	.....	12 50	
McDongall & Ludgate.	1879 .....	65 07	.....	65 07	
Bigelow & Trounce .....	1882 to 1885 .....	216 21	.....	216 21	
R. G. Strickland .....	1882, '83, '85, '86 and '87.	215 08	.....	215 08	Dead and estate distributed.
Est. late Geo. Hillard.	1877 to 1883 and 1886 .....	354 15	.....	354 15	
T. G. Hazlett .....	1881, '82, '84 and '89 .....	885 25	.....	885 25	According to judgment in Exchequer Court, <i>re</i> Boyd <i>vs.</i> Smith, these cannot be collected.
J. M. Irwin .....	1882, '83, '85 and '88 .....	698 45	.....	698 45	
D. Ulyot .....	1881 to 1887 .....	547 68	.....	547 68	
Green & Ellis .....	1881 to '83, '85, '88 and '89 .....	157 01	.....	157 01	
A. W. Parkin .....	1884, '85, '88, '90 and '91 .....	65 92	.....	65 92	
The Dickson Estate .....	1883 .....	137 50	.....	137 50	Sent to Dept. of Justice for collection.
Alfred McDonald .....	1888 .....	40 80	.....	40 80	
John Parkin .....	1889 .....	13 00	.....	13 00	
John Dovey .....	1894, '95, '96 .....	.....	35 70	35 70	
		3,521 19	35 70	3,556 89	

EDW. T. SMITH,

*Collector of Public Works Revenue.*DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, June 2, 1909.

## No. 8.—STATEMENT of Slide and Boom Dues from Saguenay Works, uncollected March 31, 1909.

Name.	Year to which Dues belong.	Amount.	Remarks.
		\$ cts.	
La Cie de Pulpe de Chicoutimi .....	1906, 1907, 1908 .....	5,568 15	Disputed.
Jos. Vachon .....	1906 .....	56 67	"
		5,624 82	

EDW. T. SMITH,

*Collector of Public Works Revenue.*DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, June 2, 1909.

9-10 EDWARD VII., A. 1910

## THE DRY DOCK AT ESQUIMALT.

No. 9.—STATEMENT of Dues and Other Charges Collected During the Year ended March 31, 1909.

NAME OF VESSEL DOCKED.	Tonnage.	PERIOD OF DOCKAGE.		Dockage charges.	Other charges.	Total.
		From	To			
		1908.	1908.	\$ cts.	\$ cts.	\$ cts.
S.S. 'Taunton' .....	3,793	April 3...	April 4...	200 00	1 20	201 20
S.S. 'Agapanthus' .....	4,287	" 27...	" 28...	400 00	.....	400 00
S.S. 'Victoria' .....	3,502	May 18...	May 19...	511 00	1 20	512 20
S.S. 'River Fourth' .....	4,413	" 30...	" 31...	400 00	1 20	401 20
S.S. 'Suveric' .....	6,585	June 2...	June 4...	572 00	301 20	873 20
S.S. 'Greenwich' .....	2,938	Aug. 5...	Aug. 6...	400 00	1 20	401 20
S.S. 'Indravelli' .....	5,805	" 10...	" 11...	400 00	7 70	407 70
S.S. 'Thyra' .....	3,742	Sept 14...	Sept. 16...	515 00	60	515 60
S.S. 'Amiral Exelmans' .....	6,029	" 17...	" 18...	561 00	.....	561 00
H.M.S. 'Algerine' .....	1,100	" 23...	Nov. 16...	1,742 00	.....	1,742 00
S.S. 'Rygia' .....	Water	supplied...	.....	.....	1 40	1 40
S.S. 'Fukut Maru' .....	5,339	Nov. 18...	Nov. 28...	1,723 00	24 60	1,747 60
D.G.S. 'Lillooet' .....	591	" 30...	Dec. 2...	350 00	.....	350 00
S.S. 'Glenfarg' .....	Water	Entry supplied	fee.....	200 00	.....	200 00
S.S. 'Eir' .....	4,550	Dec. 10...	Dec. 22...	3,372 00	82 70	3,454 70
Sp. 'Lord Shaftesbury' .....	2,341	" 23...	" 24...	487 00	2 10	489 10
		1909.				
S.S. 'Glenfarg' .....	4,550	" 26...	Feb. 7...	5,433 00	346 20	5,979 20
S.S. 'Eir' .....	Water	supplied...	.....	.....	2 80	2 80
		1909.				
S.S. 'Agapanthus' .....	4,287	Feb. 12...	Feb. 14...	526 00	51 10	577 10
H.M.S. 'Egeria' .....	940	" 19...	March 9...	635 76	.....	635 76
Dredge 'Fruhling' .....	745	March 15...	" 16...	350 00	201 10	551 10
S.S. 'Princess Charlotte' .....	3,844	" 22...	" 24...	517 00	10 20	527 20
S.S. 'Amiral Dupere' .....	.....	Entry	Fee .....	200 00	.....	200 00
	69,381			\$19,544 76	\$1,038 60	\$20,583 36

EDW. T. SMITH,  
Collector of Public Works Revenue.DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, June 7, 1909.

SESSIONAL PAPER No. 19

## THE DRY DOCK AT LEVIS.

No. 10.—STATEMENT of Dues and Other Charges Collected During the Year ended March 31, 1909.

NAME OF VESSEL DOCKED.	Tonnage.	PERIOD OF DOCKAGE.		Dockage charges.	Other charges.	Total
		From	To			
		1907.	1907.	\$ cts.	\$ cts.	\$ cts.
S.S. 'Montcalm' .....		Nov. 27.	Dec. 1 ..	1,476 40	50 00	1,526 40
S.S. 'Quebec' .....		Wintering		1,000 00		1,000 00
S.S. 'Lady Eileen' .....				400 00		400 00
		1908.				
S.S. 'Campana' .....	1,697	April 18.	April 23.	731 82		731 82
S.S. 'Carleton' .....	1,350	" 25.	May 14.	1,504 25	6 25	1,510 50
Tug 'Witherbee' .....		Wintering		250 00		250 00
Damages .....					2 00	2 00
Dredge 'International' .....	528	April 25.	May 14.	834 75		834 75
Light Ship 'Anticosti' .....	269	" 25.	" 14.	555 55		555 55
Three Gov't Scows .....	230	" 25.	" 14.	518 50		518 50
S.S. 'La Canadienne' .....	372	May 14.	" 18.	374 40		374 40
S.S. 'Ottawa' .....	3,071	" 21.	June 12.	3,731 24	123 50	3,854 74
S.S. 'Lord Strathcona' .....	495	July 2.	July 7	399 00		399 00
Barge 'Felix Carbray' .....	591	" 8.	" 8.	300 00		300 00
S.S. 'Amethyst' .....	1,357	" 9.	" 18.	899 59		899 59
S.S. 'Rapids King' .....	1,800	" 18.	" 29.	1,241 00		1,241 00
S.S. 'Montcalm' .....	1,432	June 15.	June 30.	1,316 60		1,316 60
S.S. 'Arctic' .....	762	" 15.	" 30.	871 50		871 50
S.S. 'Champlain' .....	522	July 2.	July 7.	430 50		430 50
S.S. 'Portsmouth' .....	2,185	" 30.	Aug. 14.	1,805 50		1,805 50
S.S. 'Borgestad' .....	3,944	Aug. 17.	" 22.	915 52		915 52
S.S. 'Campana' .....	1,697	Entry fee	for winter	200 00		200 00
S.S. 'Brockville' .....	944	" "	" "	200 00		200 00
S.S. 'Malin Head' .....	3,467	" "	" "	200 00		200 00
S.S. 'Corinthian' .....	6,227	Sept. 16.	Oct. 9.	4,591 88	89 25	4,681 13
Barge 'Henry R. James' .....	1,600	Oct. 12.	" 22.	1,070 00		1,070 00
S.S. 'Lady Grey' .....	733	Aug. 29.	Sept. 2.	200 00	50 00	250 00
S.S. 'Ashanti' .....	3,389	Nov. 14.	Nov. 14.	1,224 46	24 75	1,249 21
Dredge 'Beaujeu' .....	2,500	Oct. 27.	Nov. 5.	1,690 00	39 75	1,639 75
	43,162½			\$28,844 46	\$ 383 50	\$29,227 96

EDW. T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,

OTTAWA, June 7, 1909.

9-10 EDWARD VII., A. 1910

## THE DRY DOCK AT KINGSTON.

No. 11.—STATEMENT of Dues and other charges Collected during the Year ending March 31, 1909.

Name of Vessel Docked.	Tonnage.	PERIOD OF DOCKAGE.		Dockage Charges.	Other Charges.	Total.
		From	To			
		1908.	1908.	\$ cts.	\$ cts.	\$ cts.
Str. 'Aletha'.....	171	April 10.	April 11.	34 20		34 20
Tug 'Glide'.....	78	" 13..	" 15..	40 00		40 00
Bge. 'Kingston'.....	578	" 15..	" 17..	168 49	6 00	174 49
" 'Augustus'.....	802	" 20..	" 23..	242 46	6 00	248 48
Str. 'Glangarry'.....	495	" 23..	May 1..	306 90	5 00	311 90
" 'Pierrepoint'.....	252 1/2					
" 'Ramona'.....	57 1/2	May 4..	" 11..	191 58	3 00	194 58
Sch. 'Maizie'.....	294	" 12..	" 13..	69 09		69 09
Str. 'America'.....	521	" 14..	" 15..	120 34		120 34
" 'Turbinia'.....	1,064	" 18..	" 20..	230 88	5 00	235 88
" 'St. Joseph'.....	304	" 25..	" 27..	82 08	10 50	92 58
" 'Brockville'.....	191	" 28..	" 29..	48 20		48 20
Yacht 'Corona'.....	304	June 10.	June 13..	103 36	10 50	113 86
Sch. 'Ford River'.....	235	" 15..	" 17..	77 00		77 00
Bge. 'Alberta'.....	314	" 20..	" 20..	62 80		62 80
Tug 'Emerson'.....	276	" 22..	" 23..	65 20	5 00	70 20
Bge. 'Bella'.....	454	" 23..	" 25..	122 58	3 00	125 58
Str. 'Scout'.....	176	" 3..	" 6..	75 20		75 20
Dredge 'Sir Richard' and two scows	285	" 26..	" 30..	107 00	10 50	117 50
Str. 'Arundell'.....	339	" 30..	July 8..	222 05	74 40	296 45
Bge. 'Quebec'.....	989	July 9..	" 11..	218 13	6 00	224 13
Str. 'Ontario No. 1'.....	3,229	" 19..	" 22..	1,050 99	31 80	1,082 79
Tug 'D. G. Thompson'.....	182	" 24..	" 25..	36 40		36 40
Str. 'Macassa'.....	529	" 26..	" 26..	102 00	5 00	107 00
Bge. 'Hiawatha'.....	518	" 27..	" 28..	101 80		101 80
" 'Burma'.....	885	" 28..	" 30..	200 45		200 45
Sch. 'Flora Calveth'.....	190	" 31..	Aug. 1..	38 00		38 00
Str. 'Argyle'.....	700	Aug. 3..	" 5..	169 00		169 00
Yacht 'Wave Crest'.....	63	" 5..	" 8..	60 00		60 00
Sch. 'Clara'.....	232	" 10..	" 12..	66 40		66 40
Str. Bge. 'Kenirving'.....	145	" 10..	" 12..	49 00		49 00
Str. 'City of New York'.....	292	" 20..	" 22..	78 84		78 84
" 'India'.....	976	" 22..	" 25..	250 08		250 08
" 'Ramona'.....	57	" 28..	" 29..	20 00		20 00
" 'Frontenac'.....	111	" 31..	Sept. 5..	102 20	5 00	107 20
" 'St. Joseph'.....	304	Sept. 7..	" 9..	103 36	10 50	113 86
Bge. 'Winnipeg'.....	681	" 10..	" 17..	380 29	6 00	386 29
Str. 'D. R. Van Allen'.....	318	Oct. 12..	Oct. 13..	85 86		85 86
Bge. 'Kildonan'.....	499	" 22..	" 24..	134 73		134 73
Tug 'J. H. Hackett'.....	117	" 26..	" 26..	23 40		23 40
Str. 'Business'.....	958	Nov. 3..	Nov. 6..	279 92	31 00	310 92
Bge. 'Montreal'.....	337	" 7..	" 7..	67 40		67 40
" 'Condor'.....	567	" 9..	" 10..	106 70		106 70
" 'Trenton'.....	100	" 10..	" 17..	130 00		130 00
" 'Dorchester'.....	375	" 17..	" 18..	75 00		75 00
Tug 'Frank D. Philips'.....	83 1/2					
Bge. 'John S. Parsons'.....	203 1/2	" 19..	" 20..	67 21	5 00	72 21
" 'Selkirk'.....	719	" 21..	" 21..	121 90		121 90
Str. 'Bickerdike'.....	1,515	" 22..	Jan. 12..	2,228 30	82 75	2,311 05
Bge. 'Ungava'.....	1,226	Jan. 15..	April 1..	750 00		750 00
Dge. 'Sir Richard'.....	125			750 00	54 20	804 20
Str. 'Bickerdike'.....		Entry Fee.		100 00		100 00
	24,415			10,317 69	376 15	10,693 84

EDW. T. SMITH,

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, June 7, 1909.

Collector of Public Works Revenue.



## SESSIONAL PAPER No. 19

## No. 12.—STATEMENT of Rents outstanding, uncollected, on March 31, 1909.

Name.	Place.	Street and No.	Amount.
			\$ cts.
A. Bureau & Freres .....	Ottawa.	Sussex Street, No. 530 .....	200 00
Harris Balon .....	"	" 486 .....	7 00
Le Temps Printing and Publishing Co. ....	"	" 552-554 .....	321 00
J. C. Pepin .....	"	" 390 .....	26 00
Wm. Charroa .....	"	" 460 .....	10 00
Noe Brunet .....	"	" 392 .....	13 00
Mrs. J. Hyland .....	"	" 408 .....	3 00
Frank Bertrand .....	"	" 488 .....	7 00
Edward Pagé .....	"	" 540 .....	65 00
L. F. M. Globensky .....	"	" 374 .....	72 00
A. Perrault .....	"	" 414 .....	17 00
A. d'Amour .....	"	" 546 548 .....	40 00
McCormic Manufacturing Co. ....	"	" 498-500 .....	50 00
Janvier Carisse .....	"	" 460 .....	9 00
Mrs. F. Rogers .....	"	" Rear 494 .....	39 00
Mrs. Hickey .....	"	McKenzie Ave. 36 .....	50 00
Mrs. Dionne .....	"	" 37 .....	10 00
V. Belanger .....	"	" 36 .....	34 00
Mrs. Desrosiers .....	"	" 38 .....	60 00
Mrs. Cuzner .....	"	" 20 .....	20 00
F. McDougall .....	"	" 40 .....	60 00
Mrs. Archainbault .....	"	St. Patrick St. 106 .....	17 50
Miss Guilmont .....	"	" 109 .....	18 00
J. Demoulin .....	"	" 117 .....	15 00
Jean Nastorg .....	Montreal	St. Catherine, E. 802 .....	3 00
Mme. Jasmin .....	"	" 804 .....	18 00
			1,184 50

EDW. T. SMITH,  
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, June 2, 1909.



## PART VII

## MISCELLANEOUS

CONTRACTS LET BY THIS DEPARTMENT.

PROPERTY PURCHASED OR SOLD.

PROPERTY, LEASED TO OR BY THE DEPARTMENT.

CURATOR'S REPORT, NATIONAL ART GALLERY.

NAMES OF CHIEF OFFICERS OF THE DEPARTMENT.

NAMES OF OFFICIALS EMPLOYED ON SLIDES AND BOOMS.

NAMES OF PERSONS EMPLOYED ON GRAVING DOCKS.

NAMES OF ENGINEERS, FIREMEN AND CARETAKERS OF PUBLIC BUILDINGS.

AND THE OFFICIAL CORRESPONDENCE OF THE DEPARTMENT.

FOR THE

FISCAL YEAR ENDED MARCH 31, 1909



## DEPARTMENT OF PUBLIC WORKS OF CANADA,

## LAW CLERK'S OFFICE,

OTTAWA, July 2, 1909.

SIR,—I beg to transmit to you herewith inclosed the following statements, concerning the transactions of the department, from April 1, 1908, to March 31, 1909, with respect to contracts and properties, and which are required for insertion in the annual report for the period above-mentioned, viz.:—

No. 1. Statement of contracts let by this department, from April 1, 1908, to March 31, 1909.

No. 2. Statement of property purchased and sold by the said department during the same period.

No. 3. Statement of property leased to and by the said department during the same period.

No. 4. A list of some of the public Acts of the Parliament of Canada, passed at the last session and having reference to the department.

I have the honour to be, sir,  
Your obedient servant,

J. A. CHASSE,  
*Law Clerk.*

NAPOLÉON TESSIER, Esq.,  
Secretary, Department of Public Works.  
Ottawa, Ont.



# STATEMENTS

SHOWING

1ST.—CONTRACTS LET BY THE DEPARTMENT OF PUBLIC WORKS OF CANADA, FROM APRIL 1, 1908, TO MARCH 31, 1909.

2ND.—PROPERTY PURCHASED OR SOLD BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED MARCH 31, 1909.

3RD.—PROPERTY LEASED TO AND BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED MARCH 31, 1909.

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, from April 1, 1908, to March 31, 1909.

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS.			- 8 cts.
<i>Nova Scotia.</i>			
Amherst, Post Office. Supply of coal.	J. H. Hewson	Sept. 23, 1908.	307 31
" Public Building. Tower clock.	Gillett & Johnston	Jan. 27, 1909.	1,600 00
" " New boiler.	Robb Engineering Co., Ltd	Sept. 25, 1908.	730 00
Annapolis, Post Office. Supply of coal.	Geo. B. Hardwick	" 14, 1908.	205 22
Antigonish " " "	James Kenna	Oct. 5, 1908	190 02
Arichat " " "	I. LeBlanc, Terrio & Cie.	Sept. 21, 1908.	181 25
Baddeck " " "	McKay & McKaskill Co.	" 12, 1908.	207 00
Bridgewater " " "	James Kenna.	Oct. 5, 1908.	186 75
" Public Building. Heating apparatus	Frank Powers.	Aug. 28, 1908.	950 00
" " Wiring and fittings	L. C. Gilling.	June 23, 1908.	685 00
" " Striking tower clock	Birks & Sons	Feb. 5, 1909.	3,462 00
Canso, Construction of outhouse.	B. L. Redding.	" 16, 1909.	350 00
" Post Office Supply of coal.	A. N. Whitman & Son.	Sept. 12, 1908.	314 10
Dartmouth " " "	Acadia Coal Co.	" 22, 1908.	143 18
Digby " " "	F. Robinson	" 29, 1908.	275 00
Guysborough, Post Office " " "	C. S. Strophe	" 39, 1908.	150 82
Halifax, Custom House. Tower clock.	W. H. Buckley.	Nov. 21, 1908.	1,050 00
" " Passenger elevator.	Otis Fensom Elevator Co., Ltd.	June 20, 1908.	7,800 00
" Post Office. Alterations.	W. E. Keefe	July 18, 1908.	94,000 00
" Asst. Rec. Gen'l's Office. Supply of coal	S. Cunard & Co.	Sept. 23, 1908.	42 00
" New Custom House " "	Acadia Coal Co.	" 14, 1908	456 03
" Asst. Rec. Gen'l's Office. " "	"	" 14, 1908.	37 35
" Immigration Building " "	"	" 14, 1908.	450 79
" Detention Hospital " "	"	" 14, 1908.	445 30
" Examining Warehouse " "	"	" 14, 1908	208 59
Inverness, Post Office. Supply of coal.	Inverness Ry. & Coal Co.	Oct. 12, 1908.	20 15
" Public Building. Wiring and fixtures.	A. Kennedy.	Apr. 1, 1908.	700 00
Kentville " Supply of coal.	P. E. Lloyd	Sept. 12, 1908	250 00
Liverpool, Post Office. Supply of coal.	L. W. Drew.	" 25, 1908.	175 00
Lunenburg " " "	John B. Young.	" 18, 1908	199 50
" Public Building. Tower clock.	C. G. Schulze.	" 14, 1908.	1,600 00
New Glasgow " Alterations.	R. L. Olding	Oct. 14, 1908.	1,495 00
" " Electric wiring and fittings	P. E. Marchand & Co.	Feb. 15, 1909.	775 00
North Sydney, Post Office. Supply of coal	The Mackay Mining Co.	Dec. 3, 1908.	255 00
Pictou, Custom House " "	The Intercolonial Coal Mining Co.	Sept. 14, 1908.	405 93
" Post Office " "	"	" 14, 1908	412 23
Shelburne, Public Building. Heating apparatus.	F. Powers.	Oct. 20, 1908.	1,245 00
" " Electric wiring.	W. A. Mackay & Co.	July 21, 1908.	845 00
Springfield, Post Office. Supply of coal.	The Cumberland Railway & Coal Co.	Sept. 18, 1908	222 80
Sydney " " "	"	" 14, 1908	229 13
Sydney Mines " " "	Hugh G. Campbell.	Oct. 15, 1908.	192 50
Truro " " "	Acadia Coal Co.	Sept. 14, 1908.	141 25
" Armoury. Electric light wiring, &c.	P. E. Marchand & Co.	July 13, 1908.	495 00
" " Supply of electric energy.	Chambers' Elec. Light & Power Co.	Aug. 29, 1908.	per 1,000
Westville, Post Office. Supply of coal.	The Intercolonial Coal Mining Co.	Sept. 14, 1908.	k. hrs 0 10
" Public Building. Heating apparatus	E. F. Munro.	July 22, 1908	262 31
" " Interior fittings.	Oshawa Interior Fitting Co.	Mar. 16, 1909.	969 00
Windsor " Supply of coal.	Fred. W. Dimock.	Sept. 24, 1908.	283 74
Yarmouth " " "	L. E. Baker & Co.	" 16, 1908.	92 25
" " Tower clock.	Smith & Sons.	June 27, 1908.	1,300 00
<i>Prince Edward Island.</i>			
Charlottetown, Public Building. Works to.	Bruce Stewart & Co.	Aug. 31, 1908.	705 00
" Dom. Building. Supply of coal.	A. Pickard & Co.	Sept. 8, 1908.	739 24



## SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &amp;c.—Continued.

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—Continued.			\$ cts.
Prince Edward Island—Concluded.			
Georgetown, Public Building. Alterations, &c.	B. D. Huntley	Oct. 30, 1908.	3,000 00
Montague, Post Office. Supply of coal.	Poole & Thompson	Sept. 12, 1908.	157 06
Souris, Post Office. Supply of coal.	C. Lyons & Co.	Sept. 12, 1908.	138 18
Summerside " "	R. T. Holman, Limited.	" 15, 1908.	303 19
New Brunswick.			
Bathurst, Post Office. Supply of coal.	Joseph Read & Co.	Sept. 30, 1908.	102 65
Campbellton " "	Frank S. Blair	" 23, 1908.	240 00
Chatham " "	Edward Johnson	" 21, 1908.	341 12
Dalhousie " "	Joseph Read & Co.	" 30, 1908.	181 75
" " "	Frank S. Blair	" 23, 1908.	54 30
Fredericton " Electric wiring, &c.	P. E. Marchand & Co.	July 13, 1908.	1,349 00
" " Granolithic sidewalks.	R. S. Law	Sept. 29, 1908.	1,714 00
" " Supply of coal.	Patrick Farrell	" 18, 1908.	272 29
Marystown " "	Frank I. Morrison	" 16, 1908.	175 02
Moncton " "	W. M. Weldon	" 16, 1908.	342 41
Newcastle " "	The Stothart Mercantile Co., Ltd.	" 16, 1908.	357 15
Richibucto, Public Building " "	Geo. W. Robertson	" 30, 1908.	37 00
St. John, Savings Bank " "	J. S. Gibbon & Co.	" 16, 1908.	203 19
" Custom House " "	Jas. S. McGivern	" 17, 1908.	102 00
" Immigration Building " "	" "	" 17, 1908.	21 37
" West, Post Office " "	R. P. & W. F. Starr, Ltd.	" 17, 1908.	604 88
" Savings Bank " "	" "	" 17, 1908.	218 28
" Custom House " "	" "	" 17, 1908.	121 17
" Immigration Building " "	" "	" 17, 1908.	206 36
" New Detention " "	" "	" 17, 1908.	160 53
" Military Store " Electric light wiring	The Vaughan Electric Co., Ltd.	June 22, 1908.	914 20
" " " Freight elevator.	Otis-Penson Elevator Co., Ltd.	Aug. 1, 1908.	2,467 00
" " " Heating apparatus.	James Buckley	Dec. 31, 1908.	1,940 00
St. Stephen, Post Office. Supply of coal.	W. C. Purves	Oct. 2, 1908.	182 25
Sussex " "	T. H. Brown & Sons	Sept. 17, 1908.	360 00
Tracadie, Lazaretto " "	The Stothart Mercantile Co., Ltd.	" 28, 1908.	609 72
Woodstock, Post Office " "	W. F. Dibblee & Sons	" 15, 1908.	275 97
Quebec.			
Acton Vale, Post Office. Supply of coal	S. E. Desmarais & Co.	Sept. 16, 1908.	
Aylmer " "	The C. C. Ray Co., Ltd.	" 14, 1908.	205 00
Berthierville " "	Piette & Trempé	Oct. 20, 1908.	84 00
Buckingham " "	W. D. Morris	Sept. 12, 1908.	136 40
Chicoutimi " "	Côté, Boivin & Cie.	" 14, 1908.	320 00
Coaticook " "	W. C. Webster & Son	" 14, 1908.	256 00
Cookshire. Construction of a public building.	Simoneau & Dion	Oct. 3, 1908.	13,300 00
" Public Building. Heating apparatus.	Geo. E. Delorme	Mar. 3, 1909.	740 00
" " Work to " "	McManne & Hodge	" 6, 1909.	628 00
Drummondville, Post Office. Supply of coal	Anthime Cadorette	Sept. 14, 1908.	127 50
Dundee, Custom House " "	Allen S. Matthews	" 12, 1908.	67 50
Farnham, Post Office " "	Arthur Giroux	" 12, 1908.	65 00
Fraserville " Repairs.	Alfred Fortin	Oct. 8, 1908.	1,124 00
" " Supply of coal.	Nap. Dion	Sept. 14, 1908.	262 50
Granby " "	T. T. Phoenix	" 19, 1908.	199 50
Hochelaga " "	Joseph Elie	" 28, 1908.	130 25
" " Interior fittings	Bourassa & Son	" 3, 1908.	868 00
" " Electric wiring	Scott & Rubenstein	Dec. 21, 1908.	286 20
Hull " Supply of coal	The C. C. Ray Co., Ltd.	Sept. 14, 1908.	208 00
Iberville " "	Cyrille Boucher	Nov. 10, 1908.	65 00
Joliette " Electric current, supply of	St. Johns Electric Light Co.	Jan. 14, 1909.	Sch. of rates
" " Supply of coal.	Sinai Bourgeois	Sept. 10, 1908.	226 39

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			8 cts.
Quebec— <i>Continued.</i>			
Joliette, Armoury, construction of an.....	Simoneau & Dion.....	Feb. 15, 1909.	13,500 00
Knowlton. Construction of a post office.....	".....	June 22, 1908.	16,150 00
" Public Building. Heating apparatus.....	R. McLaren.....	Oct. 30, 1908.	1,100 00
Knowlton, Public Building. Electric fittings.....	N. Simoneau.....	Sept. 22, 1908.	1,000 00
Lachine, Post Office. Supply of coal.....	Joseph Allard.....	" 28, 1908.	102 72
Lachute.....	R. Creswell.....	Oct. 8, 1908.	240 00
" " Heating apparatus.....	O. B. Lafleur & Son.....	Sept. 11, 1908.	1,050 00
" Public Building. Electric wiring.....	".....	Oct. 16, 1908.	650 00
" " Supply of electric current.....	Electric Light Company of Lachute.....	Jan. 5, 1909.	lamp per annum. 7 00
Laprairie, Post Office. Supply of coal.....	H. Brossard.....	Sept. 17, 1908.	152 70
L'Assomption " ".....	Louis Desmarais.....	" 19, 1908.	212 50
Lévis " ".....	Robitaille & Co.....	" 21, 1908.	395 78
Longueuil " ".....	D. Brissette.....	" 15, 1908.	155 06
Magog, Public Building. Construction of.....	R. Cameron.....	May 27, 1908.	19,940 00
" " Electric light equipment.....	P. E. Marchand & Co.....	Sept. 11, 1908.	877 00
" " Heating apparatus.....	Albert Beauséne.....	Oct. 3, 1908.	1,800 00
" " Interior fittings.....	R. Cameron.....	Mar. 10, 1909.	2,900 00
Montuagny, Post Office. Supply of coal.....	The Archer Co., Limited.....	Oct. 22, 1908.	224 41
Montreal " ".....	L. Cohen & Son.....	Jan. 4, 1909.	910 58
" Immigration Office.....	Joseph Elie.....	Sept. 21, 1908.	165 68
" Custom House.....	M. M. Trudeau & Frère.....	" 24, 1908.	1,059 18
" Ex'g. Warehouse.....	J. C. Macdiarmid.....	" 30, 1908.	1,150 00
" Custom House.....	L. Cohen & Son.....	Jan. 4, 1909.	
" Revenue Building.....	".....	" 4, 1909.	292 50
" Cust. Exp. Parcels Office. Fitting up.....	Jos. Côté.....	Aug. 7, 1908.	2,500 00
" Postal Station "C." Electric wiring.....	J. O. Gagnon.....	Sept. 5, 1908.	425 00
" " "B." fixtures.....	A. Simoneau.....	" 21, 1908.	350 00
" Custom House. Mezzanine floor.....	J. B. Gratton.....	Oct. 5, 1908.	4,144 00
" Post Office. Addition to; heating apparatus.....	Peter Lyall & Sons.....	" 22, 1908.	18,407 00
" Customs Parcels Office. Roof, etc.....	Jos. Côté.....	" 16, 1908.	1,350 00
" Post Office. Removal of snow.....	A. C. St. Amour.....	Nov. 25, 1908.	185 00
" Cust. Parcels Office. Heating apparatus.....	Jos. Thibault.....	Dec. 19, 1908.	2,600 00
" Cust. Express Office. New lavatories.....	".....	" 22, 1908.	1,175 00
" Post Office Building. Steam heating service.....	Montreal Light, Heat & Power Co.....	Jan. 8, 1909.	Schedule of rates.
" " " New addition; changes.....	Peter Lyall & Sons.....	Mar. 3, 1909.	1,420 00
" Custom House. Painting.....	N. G. Valiquette.....	" 9, 1909.	794 02
" " Cupboards.....	J. B. Gratton.....	" 9, 1909.	632 00
Nicolet, Public Building. Tower clock.....	J. O'Shaughnessy.....	" 23, 1909.	400 00
" Post Office. Supply of coal.....	Hamilton Lacerte.....	Sept. 22, 1908.	221 50
Plessisville, Public Building. Construction of.....	Paquet & Godbout.....	Dec. 11, 1908.	14,000 00
Point St. Charles, Postal Station "D." Construction of.....	Morssen & Co.....	" 2, 1908.	31,600 00
Quebec, Post Office. Alterations to.....	Jobin & Paquet.....	June 19, 1908.	822 10
" Citadel. Addition to Gov.-Gen.'s quarters.....	Achille Dugal.....	May 9, 1908.	6,809 00
" Post Office. Elevator.....	Otis-Fensom Elevator Co., Limited.....	Oct. 3, 1908.	7,600 00
" Louise Embankment. Immigration building.....	Canadian Pacific Ry. Co.....		11,649 00
" Drill Shed. School of gunnery.....	P. T. C. Dumais and L. Lachance.....	Nov. 26, 1908.	45,895 00
" Military Store Building. Freight elevator.....	Otis-Fensom Elevator Co., Limited.....	Jan. 16, 1909.	2,900 00
" Post Office. Works to electric elevator.....	David Larose.....	" 30, 1909.	1,490 00
(St. Roch) Construction of a Post Office.....	Jinchereau & Lamonde.....	Feb. 6, 1909.	47 711 00

## SESSIONAL PAPER No. 19

## No. 1.—CONTRACTS let by the Department of Public Works of Canada, &amp;c.—Continued.

Works,	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—Continued.			\$ cts.
Quebec—Continued.			
Quebec, Arsenal. Metal fittings . . . . .	Office Specialty Co. . . . .	Dec. 10, 1908.	2,218 00
" Cullers' Office. Supply of coal . . . . .	N. Madden & Son. . . . .	Sept. 21, 1908.	356 05
" Custom House " . . . . .	" " . . . . .	" 21, 1908.	963 59
" Marine Agency " . . . . .	" " . . . . .	" 21, 1908.	
" Exam'g Warehouse " . . . . .	" " . . . . .	" 21, 1908.	1,368 46
" Immigration Office " . . . . .	" " . . . . .	" 21, 1908.	524 44
" Immigration Hospital (Trachoma). Sup- ply of coal . . . . .	" " . . . . .	" 21, 1908.	1,254 22
" Post Office. Supply of coal . . . . .	" " . . . . .	" 21, 1908.	867 92
" Gov.-Genl.'s Quarters. Supply of coal . . . . .	" " . . . . .	" 21, 1908.	717 75
" (St. Roch) Post Office " . . . . .	" " . . . . .	" 21, 1908.	56 95
" Weights and Measures Office " . . . . .	" " . . . . .	" 21, 1908.	766 60
Richmond, Public Building. Tower clock. . . . .	R. Rattray. . . . .	Feb. 4, 1909.	3,300 00
" Post Office. Supply of coal. . . . .	J. A. Smith. . . . .	Sept. 15, 1908.	221 11
Rimouski, Post Office. Supply of coal. . . . .	H. G. Lepage. . . . .	" 18, 1908.	263 20
" Public Building. Repairs. . . . .	J. A. Talbot. . . . .	Aug. 18, 1908.	1,322 90
St. Eustache, Post Office. Fittings. . . . .	Geo. Bradley. . . . .	May 4, 1908.	648 00
St. Henri " Supply of coal. . . . .	Joseph Elie. . . . .	Sept. 21, 1908.	204 69
" " Works to. . . . .	Nap. Lavoie. . . . .	June 26, 1908.	325 00
St. Hyacinthe " Inland Revenue. Sup- ply of coal. . . . .	Anthime Cadorette. . . . .	Sept. 24, 1908.	141 02
" Custom House. Repairs to pipe. . . . .	Jos. Huette. . . . .	Oct. 8, 1908.	300 00
" Public Building. Galvanized iron roof . . . . .	" " . . . . .	Feb. 13, 1909.	1,177 80
St. Jérôme, Post Office. Supply of coal. . . . .	S. G. Laviolette. . . . .	Sept. 16, 1908.	254 58
St. Johns " " . . . . .	Jules Audette. . . . .	" 14, 1908.	
" Cavalry Stables. Sheetting and paint- ing. . . . .	A. Saurette. . . . .	April 21, 1908.	1,500 00
" Post Office. Heating apparatus. . . . .	G. Mombteau. . . . .	July 28, 1908.	1,300 00
" Cavalry Stables " . . . . .	A. Saurette. . . . .	Dec. 14, 1908.	200 00
" Public Building. Electric wiring. . . . .	Scott & Rubenstein. . . . .	" 21, 1908.	720 00
" Post Office. Interior fittings. . . . .	J. T. Schell. . . . .	Jan. 1, 1909.	1,303 00
" Cavalry Stables. Electric wiring. . . . .	A. Papineau. . . . .	Mar. 8, 1909.	525 00
St. Louis du Mile End, Public Building. Con- crete wall. . . . .	Latreille & Latreille. . . . .	June 25, 1908.	500 00
" Public Building. Inter- ior fittings. . . . .	Bourassa & Son. . . . .	Sept. 3, 1908.	680 00
" Post Office. Supply of coal. . . . .	J. C. McDiamid. . . . .	" 30, 1908.	171 51
Sherbrooke, Post Office. Supply of coal. . . . .	La Cie Coderre & Fils. . . . .	" 18, 1908.	424 37
" Drill Hall. Heating apparatus. . . . .	Simoneau & Dion. . . . .	Nov. 16, 1908.	3,550 00
" " Electric wiring. . . . .	A. E. Choquette. . . . .	Dec. 28, 1908.	1,985 00
Sorel, Post Office. Supply of coal. . . . .	Alfred Lavallee. . . . .	Sept. 19, 1908.	357 00
" " Additional fittings. . . . .	Joseph Cardin. . . . .	July 18, 1908.	500 00
Terrebonne, Post Office. Supply of coal. . . . .	J. O. Dugay. . . . .	Sept. 16, 1908.	111 00
Thetford Mines, Post Office. Supply of coal. . . . .	Joseph Elie. . . . .	" 21, 1908.	230 39
Three Rivers, Temporary Post Office. Fittings. . . . .	Vivian Burrill. . . . .	Nov. 17, 1908.	1,850 00
" Post Office and Custom House. Supply of coal. . . . .	Geo. Leprohon. . . . .	Sept. 21, 1908.	584 25
Valleyfield, Post Office. Supply of coal. . . . .	Besner & Chasle. . . . .	" 17, 1908.	338 18
Victoriaville " " . . . . .	Octave Gaudet. . . . .	" 15, 1908.	114 04
Ontario.			
Alexandria, Post Office. Supply of coal. . . . .	Angus McDonald & Son. . . . .	Sept. 19, 1908.	263 07
Almonte " " . . . . .	Taylor Brothers, Ltd. . . . .	" 17, 1908.	179 62
Amherstburg " " . . . . .	John Fraser. . . . .	" 22, 1908.	182 00
Arnprior, Public Building. Doorway to entrance. . . . .	James Lesarge. . . . .	" 14, 1908.	850 00
Barrie, Post Office. Supply of coal. . . . .	J. G. Scott. . . . .	" 19, 1908.	241 50
Belleville " " . . . . .	The Schuter Company. . . . .	" 19, 1908.	280 95
" Drill Hall. Addition, &c. . . . .	Wm. Stuart. . . . .	Apr. 27, 1908.	8,100 00
" " Electric wiring . . . . .	" " . . . . .	June 2, 1908.	2,087 00
" " Heating apparatus . . . . .	" " . . . . .	Aug. 17, 1908.	3,595 00

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &amp;c.—Continued.

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—Continued.			8 cts.
Ontario—Continued.			
Belleville Drill Hall. Sodding and grading . . . . .	Wm. Stuart . . . . .	Sept. 21, 1908.	1,175 64
" " Concrete sidewalks . . . . .	" . . . . .	Oct. 15, 1908.	1,763 70
" " Bowling alleys (2) . . . . .	Ketchum & Co. . . . .	Feb. 3, 1909.	1,050 00
" " Interior fittings . . . . .	The Pringle Co. . . . .	" 18, 1909.	1,369 00
Berlin, Post Office. Supply of coal . . . . .	Klopfer Coal Co. . . . .	Sept. 21, 1908.	280 95
" " Tower clock . . . . .	The Arthur Pequegnat Clock Co. . . . .	Oct. 7, 1908.	1,627 00
Bowmanville " Supply of coal . . . . .	McClellan & Co., Ltd. . . . .	Sept. 18, 1908.	168 75
Brampton " " . . . . .	Daniel Pratthey . . . . .	" 24, 1908.	202 50
Brantford " " . . . . .	The Wilson Coal Co. . . . .	" 19, 1908.	207 84
Bridgeburg " " . . . . .	Isaac White . . . . .	" 20, 1908.	180 00
Brockville " " . . . . .	The Central Canada Coal Co., Ltd. . . . .	Aug. 21, 1908.	414 40
" Customs Office. Alterations to . . . . .	J. S. Mix. . . . .	Sept. 30, 1908.	467 00
Chatham, Post Office. Supply of coal . . . . .	A. R. Crow. . . . .	" 21, 1908.	218 52
" " " . . . . .	James Hamilton . . . . .	" 22, 1908.	19 87
Cobourg " " . . . . .	The Estate of Jno. Duncan . . . . .	Oct. 14, 1908.	237 50
Deseronto " " . . . . .	The Rathbun Co. . . . .	Sept. 23, 1908.	276 00
Dundas " " . . . . .	Chas. Sturrock . . . . .	" 17, 1908.	45 05
Durham, Armoury. Construction of . . . . .	Hugh McDonald . . . . .	Oct. 2, 1908.	6,000 00
Fort William, Post Office. Supply of coal . . . . .	James Murphy . . . . .	Sept. 21, 1908.	442 25
" " Additions to, &c. . . . .	Chas. H. Sherwood . . . . .	Nov. 19, 1908.	7,450 00
Galt " Supply of coal . . . . .	A. J. Colvin . . . . .	Sept. 18, 1908.	299 92
Gananoque, Post Office and Customs House, Supply of coal . . . . .	Cowan & Britton . . . . .	" 19, 1908.	257 83
" Public Building. Granolithic sidewalks . . . . .	T. Dolan & Son. . . . .	July 17, 1908.	sq. ft. 0 23
Glencoe, Public Building. Construction of . . . . .	Geo. A. Proctor. . . . .	Sept. 11, 1908.	16,238 00
Goderich " Supply of coal . . . . .	Wm. Lee . . . . .	Oct. 31, 1908.	251 92
Guelph " " . . . . .	Klopfer Coal Co. . . . .	Sept. 19, 1908.	321 70
" " Storey to Gun shed at Armoury . . . . .	Nagle & Mills. . . . .	Apr. 28, 1908.	34,925 00
" Armoury. Electric wiring . . . . .	" . . . . .	Oct. 16, 1908.	511 00
" " Bowling alleys . . . . .	Ketchum & Co. . . . .	Feb. 17, 1909.	1,050 00
" Drill Hall, Addition. Heating apparatus . . . . .	Stevenson & Malcolm . . . . .	" 17, 1909.	2,250 00
Hamilton, Post Office. Supply of coal . . . . .	The Murtion Coal Co. . . . .	Sept. 19, 1908.	1,024 83
" Custom House, long room. Grills, counters, &c. . . . .	Newbigging Cabinet . . . . .	Apr. 18, 1908.	2,610 00
" Public Building. Lighting of Tower clock . . . . .	Hamilton Gas Light Co. . . . .	" 16, 1908.	per an. 125 00
" Armoury. Installation of gas system . . . . .	" . . . . .	May 22, 1908.	4,340 00
" Public Building. Electric wiring . . . . .	The Electric Supply Co. . . . .	July 31, 1908.	1,340 00
" New Armoury. Heating system . . . . .	W. J. Walsh . . . . .	Aug. 21, 1908.	12,880 00
" " Electric wiring . . . . .	Culley & Breay . . . . .	" 24, 1908.	3,525 00
" " Bowling alleys . . . . .	Ketchum & Co. . . . .	Oct. 9, 1908.	4,550 00
" " Interior fittings . . . . .	The Burton & Baldwin Mfg. Co., Ltd. . . . .	" 13, 1908.	10,760 00
" " Supply of gas, &c. . . . .	The Electric Supply Co. . . . .	Nov. 14, 1908.	2,474 00
" Post Office. Alterations to . . . . .	Drake, Avery Co. . . . .	Mar. 9, 1909.	2,304 00
Hawkesbury " Supply of coal . . . . .	E. A. Hall . . . . .	Sept. 18, 1908.	49 81
Ingersoll " " . . . . .	W. Ross . . . . .	" 19, 1908.	265 80
Kenora " " . . . . .	Windatt & Co. . . . .	" 24, 1908.	217 35
Kingston, Inland Revenue Building. Supply of coal . . . . .	P. Walsh . . . . .	" 18, 1908.	508 00
" Gun shed and wagon. Construction of . . . . .	W. J. Chapman . . . . .	July 28, 1908.	3,475 00
" R. M. C. Servants' Quarters. Wiring . . . . .	J. Halliday . . . . .	Aug. 31, 1908.	3,350 00
" " Subordinate Officer's Quarters. Heating apparatus . . . . .	M. Sullivan . . . . .	Sept. 8, 1908.	2,750 00
" " Quarters for stables establishment . . . . .	" . . . . .	Jan. 27, 1909.	9,490 00
" Post Office. Steel case in Inspectors Office . . . . .	Office Specialty Mfg. Co., Ltd. . . . .	Mar. 20, 1909.	875 00

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			\$ cts.
<i>Ontario—Continued.</i>			
Leamington, Public Building. Construction of.	Leslie & McNeill.....	Dec. 7, 1908.	18,606 00
Lindsay, Post Office. Supply of coal.	Jos. Maunder & Son. ....	Sept. 1, 1908.	123 75
" " and Cust. House. Supply of coal.	McLennan & Co. ....	" 21, 1908	123 75
Markham, Public Building. Construction of.	The Connell Anthracite Mining Co., Ltd. ....	Nov. 16, 1908.	513 15
" " Electric wiring.	W. J. Trick. ....	May 20, 1908.	6,900 00
" " Heating apparatus.	The Keith & Fitzsimons Co., Ltd. ....	Dec. 19, 1908.	350 00
Napanee, Post Office. Supply of coal.	F. E. Van Loven. ....	Mar. 20, 1909.	365 00
" " " " " "	Chas. Stevens. ....	Sept. 22, 1908.	119 00
Niagara Falls, Post Office. Supply of coal.	W. E. Thomas. ....	" 22, 1908	119 00
North Bay " " " "	Lindsey & McCluskey. ....	" 19, 1908.	268 65
" " Fittings. ....	McGillivray & Labelle. ....	Nov. 6, 1908.	413 75
Orangeville " Supply of coal.	Joseph R. Lathwell. ....	June 2, 1908.	2,600 00
Orillia " " " "	H. A. Raney & Co. ....	Sept. 24, 1908.	179 10
Oshawa " " " "	H. A. Raney & Co. ....	" 22, 1908.	237 60
" " " " " "	David Keith. ....	" 24, 1908.	49 00
" " " " " "	P. Drew & Son. ....	" 24, 1908.	48 97
" " " " " "	Everson & Fairwell. ....	" 24, 1908.	49 00
" " " " " "	The Rathbun Co. ....	" 23, 1908.	42 21
Ottawa, Observatory and Exp. Farm. Supply of coal.	The C. C. Ray Co., Ltd. ....	" 14, 1908.	1,182 20
" Parl't and Dept'l Buildings. Supply of coal.	John Heney & Son. ....	" 3, 1908.	52,787 56
" East Block. Electric elevator.	Otis-Fensom Elevator Co., Ltd. ....	Apr. 14, 1908	3,550 00
" Public Buildings and Offices. Supply of ice.	Mary Daoust. ....	May 11, 1908.	per 100 lb. 20
" Parl't Buildings, New Addition. Stone balustrade.	McGillivray & Labelle. ....	Apr. 4, 1908.	4,439 69
" Senate. Alterations to elevator.	Otis-Fensom Elevator Co., Ltd. ....	May 22, 1908	4,500 00
" Royal Mint. Iron gates. ....	Canada Foundry Co. ....	June 10, 1908.	390 00
" Parl't Buildings. Radiators.	Dominion Radiator Co., Ltd., Toronto. ....	" 20, 1908	1,695 00
" " Additional iron pipes, valves, &c., to heating apparatus.	Martel & Langelier. ....	" 24, 1908.	2,017 87
" Parl't Buildings. Two elevators.	Otis-Fensom Elevator Co., Ltd. ....	Aug. 8, 1908	14,800 00
" West Block. Steel drawers for contract plans.	The Eclipse Mfg. Co., Ltd. ....	" 31, 1908	1,965 00
" Royal Observatory. Fittings, &c.	The Capital Scale, Brass & Iron Foundry Co., Ltd.	" 20, 1908.	2,196 00
" Parl't Building Addition. Elec. elevator.	Otis-Fensom Elevator Co., Ltd. ....	Sept. 10, 1908.	7,000 00
" Printing Bureau. Alternating current for power.	Ottawa Electric Co. ....	" 15, 1908.	per h.p. per an., \$25.00
Ottawa, Parl't. Buildings. Cable transformers, &c.	Ahearn & Soper, Ltd. ....	Sept. 12, 1908.	1,023 00
" " Alterations to window frames.	McGillivray & Labelle. ....	April 10, 1908	1,011 67
" Printing Bureau. Electric motors.	Ahearn & Soper, Ltd. ....	Sept. 24, 1908.	5,000 00
" Parl't Buildings, New Addition. Changes.	McGillivray & Labelle. ....	Oct. 22, 1908.	4,567 19
" " Additional works.	" " " " " "	" 3, 1908.	18,459 07
" Parl't. Grounds. Monument Lafontaine-Baldwin.	W. S. Allward. ....	Nov. 17, 1908.	20,000 00
" Experimental Farm. Office Building. Additions, &c.	Doran & Devlin. ....	Oct. 30, 1908	12,000 00
" Centre Block, toilet room, tile and marble works.	McGillivray & Labelle. ....	Nov. 24, 1908.	4,794 92

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			\$ cts.
<i>Ontario.</i>			
Ottawa, Dept. of Justice. Docket Room Steel Cabinet.....	Eclipse Mfg. Co., Ltd.....	Oct. 28, 1908.	507 40
" Clerk, Crown in Chancery. Steel cases.....	" ".....	Aug. 1, 1908.	4,955 00
" Langevin Block, Int. Dept. Desks.....	" ".....	Jan. 14, 1909.	492 00
" " " Steel filing cases.....	" ".....	Dec. 14, 1908.	2,625 00
" West Block, Rys. & Canals Dept. Steel desks.....	Office Specialty Mfg. Co., Ltd.....	" 16, 1908.	1,480 00
" " Electric passenger elevator.....	Otis-Fensom Elevator Co., Ltd.....	" 22, 1908.	6,800 00
" House of Commons. Silverware.....	A. Rosenthal & Sons.....	Jan. 5, 1909.	526 08
" Exp. Farm Museum and Offices. Electric wiring, &c.....	R. Anderson.....	" 23, 1909.	906 00
" Parl. Buildings. New Addition. Electric light fixtures.....	John Forman.....	Feb. 1, 1909.	2,380 00
" Exp. Farm. Residence for Chief Astronomer.....	Doran & Devlin.....	" 25, 1909.	12,300 00
" House of Commons. Chair for Speaker.....	The Valley Seating Co.....	" 18, 1909.	500 00
" Post Office. Fire escapes.....	The Capital Scale Brass & Iron Foundry Co., Ltd.....	Mar. 31, 1908.	498 00
Owen Sound, Post Office. Supply of coal.....	J. K. McLachlan.....	Oct. 12, 1908.	312 75
" " Additional story.....	Nagle & Mills.....	June 13, 1908.	8,950 00
" " Heating apparatus.....	J. A. McCorkindale.....	Feb. 25, 1909.	1,600 00
Paris, Post Office. Supply of coal.....	Geo. E. Taylor.....	Sept. 22, 1908.	140 13
Peterborough, Post Office and Custom House. Supply of coal.....	The Peterboro' Fuel & Cartage Co.....	" 21, 1908.	477 33
" Drill Hall. Heating apparatus.....	Bennett & Wright Co., Ltd.....	" 9, 1908.	5,124 00
" Armoury. Electric lighting.....	F. R. I. MacPherson & Co.....	Aug. 27, 1908.	3,350 00
Petrolia, Post Office. Supply of coal.....	The Parker Coal Co.....	Sept. 22, 1908.	166 41
Pictou, Post Office. ".....	Nelson Ostrander.....	" 19, 1908.	222 75
Port Arthur ".....	Louis Walsh Coal Co.....	" 23, 1908.	392 00
" " Additional heating apparatus.....	Marshall & Lime.....	Oct. 19, 1908.	595 00
Port Hope " Supply of coal.....	J. M. Rosevear & Co.....	Nov. 13, 1908.	295 55
Prescott " and Cust. House. Supply of coal.....	James Buckley.....	Sept. 8, 1908.	341 00
Renfrew, Public Building. Construction of.....	Joseph Bourque & Co.....	April 6, 1908.	24,500 00
" " Wiring.....	Renfrew Electric Co.....	Oct. 12, 1908.	790 00
St. Mary's Post Office. Supply of coal.....	James Armstrong.....	" 2, 1908.	204 00
St. Thomas ".....	M. Scarrow.....	Sept. 22, 1908.	250 00
Sandwich ".....	J. K. Hurley.....	" 21, 1908.	63 50
" Custom House. Fittings.....	Joseph Major.....	April 4, 1908.	670 00
Sarnia, Post Office. Supply of coal.....	W. A. Browne.....	Oct. 8, 1908.	301 91
" " Alteration to screen.....	Geo. A. Proctor.....	Feb. 12, 1909.	655 00
Sault Ste. Marie, Post Office. Supply of coal.....	The Sault Ste. Marie Coal & Wood Co., Ltd.....	Sept. 19, 1908.	278 40
Simcoe, Public Building. Tile floor in vestibule and lobby.....	H. B. Donly.....	Jan. 26, 1909.	600 00
" " Heating apparatus.....	Paulin & Rutherford.....	Mar. 12, 1909.	775 00
" " Ceramic floor.....	Schultz Bros. Co., Ltd.....	" 25, 1909.	522 00
Smith's Falls, Post Office. Supply of coal.....	H. A. Crate.....	Sept. 21, 1908.	164 40
" " Interior fittings.....	The Berlin Interior Hardwood Co., Ltd.....	Mar. 15, 1909.	1,225 00
Stratford " Supply of coal.....	J. Schneider.....	Sept. 17, 1908.	360 60
Strathroy ".....	Alex. Reid.....	" 18, 1908.	194 10
" Armoury. Wiring.....	H. C. Brittain.....	July 17, 1908.	750 00
" " Heating apparatus.....	J. Robertson & Son.....	Aug. 31, 1908.	1,215 00
" " Interior fittings.....	J. W. Murray.....	Feb. 2, 1909.	455 00
Toronto, Post Office. Wiring and fixtures.....	The Keith & Fitzsimons Co., Ltd.....	July 17, 1908.	1,088 00
" " ".....	Bennet & Wright Co., Ltd.....	Aug. 10, 1908.	1,050 00
" General Post Office. Freight elevator.....	Otis-Fensom Elevator Co., Ltd.....	Sept. 1, 1908.	1,768 00

## SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			8 cts.
<i>Ontario—Continued.</i>			
Toronto, Magazine. Construction of.	H. C. Baker & A. Jordahl.	Sept. 14, 1908.	3,467 00
" Observatory. Addition to tower.	Brown & Love	" 21, 1908.	2,530 00
" Steel dome.	The Warner & Swasey Co.	Mar. 29, 1909.	3,565 00
" Public Building. Electric energy.	Toronto Elect. Light Co., Ltd.	" 1, 1909.	*0 20
" Custom House. Supply of coal.	F. H. Ferguson.	Nov. 19, 1908.	
" Ex'g. Warehouse	"	" 19, 1908.	18 01
" Revenue Office	"	" 19, 1908.	22 15
" Junction Post Office	The Connell Anthracite Mining Co.	Sept. 22, 1908.	
" Custom House	"	" 22, 1908.	742 18
" Ex'g Warehouse	"	" 22, 1908.	1,164 84
" Post Office and Revenue Office. Supply of coal.	"	" 22, 1908.	1,415 00
Trenton, Post Office. Supply of coal.	T. H. Gothard	" 18, 1908.	238 00
Walkerton	Trail Bros.	Oct. 12, 1908.	231 75
" Armour. Levelling ground.	R. E. Truax	July 14, 1908.	1,210 00
Welland, Public Building. Construction of.	Nagle & Mills	Sept. 16, 1908.	26,526 00
Whitby	O. Gay & Son.	Oct. 16, 1908.	22,000 00
Wingham, Post Office. Supply of coal.	Richardson & Rae.	Sept. 19, 1908.	241 98
Windsor	F. X. Scully	" 21, 1908.	66 75
"	J. T. Hurley.	" 21, 1908.	366 00
Woodstock	The McIntosh Coal Co.	" 19, 1908.	305 17
" Fittings	Chas. Schofield	Feb. 18, 1909.	316 00
<i>Manitoba.</i>			
Brandon, Exp. Farm and Post Office. Supply of coal.	The Canadian Coal & Commission Co.	Sept. 19, 1908.	991 27
" Exp. Farm and Immigration Building. Supply of coal.	Robert Purdon & Co.	Aug. 19, 1908.	265 05
" Public Building. Electric wiring	Star Electric Co.	" 3, 1908.	991 00
" Armoury. Heating apparatus	The Brandon Heating and Plumbing Works.	Sept. 22, 1908.	1,800 00
Dauphin, Post Office, &c. Construction of.	Sam. Brown	Aug. 20, 1908.	20,330 00
Emerson	"	Nov. 20, 1908.	23,500 06
Fort Osborne, Quarters for married men. Heating apparatus.	James Ballantyne Co., Ltd.	Nov. 19, 1908.	2,170 00
" Officers and guard-room barracks furniture.	Office Specialty Mfg. Co.	" 19, 1908.	957 47
Neepawa, Public Building. Electric light equipment	Neepawa Electric Co.	Sept. 21, 1908.	750 00
" Public Building. Heating apparatus.	A. G. Heys.	Jan. 5, 1909.	2,000 00
" Post Office. Supply of coal.	B. W. Boulton	Sept. 21, 1908.	540 00
Portage la Prairie, Public Building. Supply of coal.	A. W. Humber.	" 19, 1908.	605 21
" Public Building. Supply of coal	Windatt & Company	" 24, 1908.	
St. Boniface, Post Office.	Harstone Bros.	" 21, 1908.	
" Fittings.	Berlin Interior Harwood Co., Ltd.	Oct. 3, 1908.	1,140 00
Selkirk,	W. J. Trick	Jan. 26, 1909.	995 00
" Supply of coal.	Harstone Bros.	Sept. 21, 1908.	285 29
Winnipeg, Examining Warehouse. Construction of	J. McDiarmid Co., Ltd.	Apr. 10, 1908.	276,000 00
" Fort Osborne Barracks. New drain.	J. McDiarmid Co., Ltd.	Apr. 16, 1908.	2,085 00
" New Guard-room. heating apparatus.	The James Ballantyne Co., Ltd.	May 21, 1908.	1,137 00
" Immigration Building. Beds	Modern Machine Co.	Sept. 4, 1908.	3,800 00
" Postal Station "B." Fittings.	Toronto Waterloo Office Fixture Co., Ltd.	Oct. 6, 1908.	2,146 00
" Post Office. Changes.	Rat Portage Lumber Co.	Mar. 11, 1909.	1,177 05
" Fort Osborne Guard-room. Electric wiring	Shipman Electric Co.	Aug. 28, 1908.	525 00

\*Per 1,000 watts.





## SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—Continued.			\$ cts.
Alberta—Continued.			
Medicine Hat, Public Building. Gas piping. . .	Onkes & Evrard. . . . .	June 22, 1908.	280 00
" Armory. Heating system. . . . .	James Rae. . . . .	Dec. 16, 1908.	866 50
" " Gas fixtures and lamps. . . . .	James Rae. . . . .	Mar. 1, 1909.	225 00
" Post Office. Fittings. . . . .	A. P. Burns. . . . .	" 13, 1909.	2,749 76
Red Deer, Land Title's Office. Plumbing, &c..	Standard Plumbing & Heat- ing Co. . . . .	Oct. 19, 1908.	733 00
" Court House. Supply of Water. . . . .	Corporation of Red Deer..	Nov. 2, 1908.	P. an. 29 00
Wainwright, Immigration Hall. Construction of.	W. P. McConnell. . . . .	Mar. 12, 1909.	2,200 00
British Columbia			
Columbia, Public Building. Electric wiring. . .	Hawkins & Hayward. . . . .	Oct. 20, 1908.	834 00
" " Heating apparatus. . . . .	Edward Hunt. . . . .	Nov. 24, 1908.	1,800 00
Fernie, " " " " " " " "	Whimster & Co. . . . .	Apr. 3, 1908.	2,278 49
" " Electric wiring, &c. . . . .	North West Electric Co. Ltd. . . . .	June 16, 1908.	1,200 00
Ladysmith, " Electric wiring, &c. . . . .	Hinton Electric Co. . . . .	Oct. 20, 1908.	838 00
Vancouver, " Two passenger elevators and one freight elevator. . .	Otis-Fensom Elevator Co., Ltd. . . . .	June 26, 1908.	20,400 00
" Public Building. Heating apparatus. . .	Leek & Co. . . . .	" 26, 1908.	10,974 00
" Post Office. Lobby-dado, &c. . . . .	Wm. N. O'Neil & Co. . . . .	Jan. 20, 1909.	1,894 50
" Public Building. Cement sidewalks. . .	Kelly Bros., Mitchell. . . . .	Mar. 9, 1909.	1,136 75
" Post Office. Electric light fixtures. . .	Robert Mitchell Co., Ltd. . . . .	Nov. 18, 1908.	5,550 00
Victoria, " Alterations, &c. . . . .	Pinsdale & Malcolm. . . . .	May 26, 1908.	14,257 00
" Detention Building. Electric wiring. .	Hinton Electric Co. . . . .	Oct. 20, 1908.	2,052 00
" Immigration Building. Heating apparatus. . . . .	John Colbert. . . . .	Mar. 19, 1909.	3,392 00
HARBOURS AND RIVERS.			
Nova Scotia.			
Arisaig. Dredging. . . . .	Canada Construction & Dredging Co., Ltd. . . . .	Oct. 16, 1908	Schedule.
Blue Rocks. Construction of breakwater. . . .	Obed A. Ham. . . . .	Jan. 11, 1909.	3,878 00
Cheticamp. Dredging. . . . .	The Dominion Dredging Co., Ltd. . . . .	July 27, 1908.	Schedule.
Country Harbour. Construction of warehouse.	W. E. Masson. . . . .	June 11, 1908.	500 00
Cribbins Point. Dredging. . . . .	Canada Construction & Dredging Co., Ltd. . . . .	Oct. 16, 1908	Schedule.
Digby. Construction of a spur pier. . . . .	J. E. & H. Bigelow. . . . .	May 22, 1908.	17,900 00
" Dredging. . . . .	Maritime Dredging & Con- struction Co., Ltd. . . . .	Sept. 1, 1908.	Schedule.
Fawsons Cove. Dredging. . . . .	Canada Construction & Dredging Co., Ltd. . . . .	Oct. 16, 1908.	"
Fourchu. " " " " " " " "	" " " " " " " "	" 26, 1908.	"
Glace Bay. Road protection works. . . . .	Wm. Curry. . . . .	April 23, 1908.	8,985 00
La Have River. Dredging. . . . .	The W. J. Pouppre Co., Ltd	Aug. 4, 1908.	Schedule.
L'Archevêque. " " " " " " " "	Canada Construction & Dredging Co., Ltd. . . . .	Oct. 16, 1908.	"
Lunenburg. " " " " " " " "	The W. J. Pouppre Co., Ltd	July 14, 1908.	"
Mabou. " " " " " " " "	The Dominion Dredging & Construction Co., Ltd. . . . .	" 27, 1908	"
Mahone Bay. " " " " " " " "	The W. J. Pouppre Co., Ltd	Aug. 25, 1908.	"
McKinnons Harbour " " " " " " " "	" " " " " " " "	" 4, 1908.	"
McPhersons Cove. Construction of a wharf. . .	Reid & Archibald. . . . .	Sept. 19, 1908.	3,973 00
Minasville. " " " " " " " "	J. E. & H. Bigelow. . . . .	Feb. 23, 1909.	7,975 00
Moser River. Dredging. . . . .	Beazley Bros. . . . .	Sept. 7, 1908.	Schedule.
North Sydney. " " " " " " " "	The W. J. Pouppre Co., Ltd	Aug. 4, 1908.	"
Port Hastings. Wharf, warehouse and roadway (construction of) . . . . .	W. J. Landry. . . . .	Sept. 28, 1908.	10,550 00

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &amp;c.—Continued.

Works.	Names of Contractors.	Date of Contract.	Amount.
<b>HARBOURS AND RIVERS—Continued.</b>			<b>8 cts.</b>
<i>Nova Scotia—Continued.</i>			
Port Hawkesbury. Dredging .....	Beazley Bros .....	Aug. 24, 1908.	Schedule.
Ship Harbour. " .....	" .....	Sept. 1, 1908.	"
Three Islands. " .....	The W. J. Poupore Co., Ltd.	July 14, 1908.	"
Weymouth. " .....	Maritime Dredging & Construction Co. ....	Sept. 1, 1908.	"
Whitney Pier. Construction of a public wharf.	Wm. Dobson .....	Nov. 30, 1908.	9,980 00
Windsor. Hand dredging around govt. wharf.	Thos. A. Mosher .....	Aug. 25, 1908.	Schedule.
Yarmouth. Dredging .....	The Dominion Dredging Co., Ltd. ....	July 27, 1908.	"
<i>Prince Edward Island.</i>			
Naufragé Pond. Construction of a boat harb'r.	F. S. Macdonald .....	Feb. 2, 1909.	12,995 00
Souris. Supply of Stone for breakwater .....	" .....	June 26, 1908.	P. c. yd. 3 49
Sturgeon. Extension and Repairs to wharf.	Neil Campbell .....	Dec. 21, 1908.	4,100 00
Vernon River. Construction of a public wharf (west side) .....	A. & W. Compton .....	" 7, 1908.	7,300 00
<i>New Brunswick.</i>			
Beaver Harbour. Construction of a pile wharf.	James E. Kane .....	Feb. 27, 1909.	8,808 00
Caraquet. Dredging .....	A. & R. Loggie .....	Aug. 17, 1908.	Schedule.
Church River " .....	P. England .....	June 6, 1908.	P. c. yd. 0.35
Campbellton. Construct'n of a deep water wharf.	Wm. Glover .....	May 28, 1908.	35,475 00
Dalhousie. Dredging .....	A. & R. Loggie .....	Aug. 17, 1908.	Schedule.
Edmundston. Extension to breastwork .....	T. P. Charleson .....	May 20, 1908.	10,440 00
Gaspereaux River. Dredging .....	Maritime Dredging & Construction Co. ....	Nov. 6, 1908.	Schedule.
Harvey Bank. Extension to Dows wharf .....	O. & W. Downey .....	Dec. 21, 1908.	3,949 00
Loggieville. Dredging .....	A. & R. Loggie .....	Aug. 17, 1908.	Schedule.
Lorneville (Reeds Point). Combined breakwater and Wharf .....	James E. Kane .....	Feb. 10, 1909.	27,000 00
Lower Caraquet. Construction of a wharf.	Honoré Duguay .....	Mar. 17, 1909.	36,500 00
Magnapit Lake. Dredging .....	Maritime Dredging & Construction Co. ....	Aug. 14, 1908.	Schedule.
Miramichi. " .....	The W. J. Poupore Co., Ltd.	" 25, 1908.	"
Miramichi River (near Barnabys Island). Dredg.	Peter England .....	July 15, 1908.	"
Moncton. Extension to public wharf .....	A. F. Fawcett .....	" 8, 1908.	14,925 00
Oromocto Shoals. Dredging .....	Maritime Dredging & Construction Co. ....	Sept. 1, 1908.	Schedule.
Quaco. Dredging .....	" .....	" 1, 1908.	"
" Extension to east pier .....	T. P. Charleson & J. Burns	Dec. 28, 1908.	32,900 00
St. Andrews. Construction of a wharf .....	A. F. Fawcett .....	Mar. 8, 1909.	15,900 00
St. John Harbour. Dredging (core at end of 400 ft.) .....	G. S. Mayes .....	June 29, 1908.	Schedule.
St. John Harbour. Extension to wharf .....	D. C. Clark .....	Nov. 24, 1908.	287,633 00
" (Courtney branch) Dredging .....	James S. Gregory .....	Feb. 8, 1909.	Schedule.
Seal Cove. Construction of a breakwater wharf.	E. R. Reid .....	Mar. 16, 1909.	29,000 00
Tabusintac. Dredging .....	P. England .....	May 20, 1908.	Per c. yd. b. meas. '37
White Head (Grand Manan). Construction of wharf .....	J. E. Gaskill & L. E. Foster	Dec. 23, 1908.	4,850 00
York Point. Dredging .....	Maritime Dredging & Construction Co. ....	Feb. 23, 1909.	Schedule.
<i>Quebec.</i>			
Batiscan River. Dredging .....	Dufresne, Turcotte & Marchildon .....	Aug. 13, 1908.	Sch. of rate.
Bécancourt River. " .....	L. Cohen & Son .....	July 14, 1908.	"
Blanch Shoals. " .....	The T. F. Moore Co. ....	" 25, 1908.	"
Cap St. Ignace. Construction of wharf .....	Cloutier & Gaudreau .....	Dec. 15, 1908.	14,913 00
Chateauguay River. Dredging .....	The Dominion Dredging Co., Ltd. ....	July 27, 1908.	Sch. of rate.
Châte à Blondeau. Landing pier (construct'n of)	Lafleur & Gravel .....	April 29, 1908.	6,550 00
Dorion. Dredging .....	L. Cohen & Son .....	July 14, 1908.	Schedule.

## SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

Works.	Names of Contractors.	Date of Contract.	Amount.
<b>HARBOURS AND RIVERS—Continued.</b>			<b>\$ cts.</b>
<i>Quebec—Continued.</i>			
Fraserville. Dredging.....	The W. J. Poupore Co., Ltd	July 14, 1908	Schedule.
Hay Island. ".....	L. Cohen & Son.....	" 8, 1908.	"
Hudson. ".....	The Canada Improvement Co.....	Aug. 10, 1908.	"
L'Assomption River. Dredging.....	The Dominion Dredging Co., Ltd.....	July 27, 1908.	"
Maskinongé River. ".....	L. Cohen & Son.....	" 14, 1908.	"
Matapedia. Proposed substructure h'way br'ge.	T. P. Charleson & J. Burns	Oct. 27, 1908.	6,862 50
" Supply of structural steel for bridge	Phoenix Bridge Co.....	Dec. 16, 1908.	Schedule.
" Steel guard railing for h'way br'ge.	Structural Steel Co., Ltd	Feb. 23, 1909	1,890 00
Notre Dame De LaSalette. Steamer 'Mildred, service, etc.....	Geo. Bothwell.....	Aug. 21, 1908.	Schedule.
Nicolet. Dredging.....	The Canada Improvement Co.....	July 31, 1908	"
Port St. Francis. Dredging.....	" " ".....	" 31, 1908.	"
Quebec Harbour. Extension to Wharf.....	Etienne Dussault & Co.....	Aug. 8, 1908.	743,976 19
" " Wooden fenders to wharf.....	" " ".....	Oct. 14, 1908	5,779 67
River Blanche. Extension block to head of pier.	P. A. Parent.....	Dec. 18, 1908.	6,300 00
" du Loup. Dredging.....	The W. J. Poupore Co., Ltd	July 14, 1908.	Schedule.
" Jesus. ".....	The Canada Improvement Co.....	Aug. 10, 1908	"
" " ".....	" " ".....	" 31, 1908	"
Roberval. Supply of fire-wood, Dredge 'Lac St. Jean'.....	F. X. Laroche.....	Feb. 19, 1909.	1,170 00
Roberval. Supply of fire-wood, Dredge 'Lac St. Jean'.....	Art. du Tremblay.....	Mar. 4, 1909.	175 00
St. Francis River. Dredging.....	The W. J. Poupore Co., Ltd	July 14, 1908.	Schedule.
St. Ignace de Loyola. Sheathing to wharf.....	Eug. Patenaude.....	Aug. 11, 1908.	1,500 00
St. Maurice River. Dredging.....	Ant. St. Pierre.....	July 26, 1908.	Schedule.
St. Pierre les Becquets. Dredging.....	The Canada Improvement Company.....	Aug. 10, 1908.	Schedule of prices.
" " Landing Pier. Construc- tion of.....	Eug. Patenaude.....	May 30, 1908.	7,456 00
St. Placide. Dredging.....	L. Cohen & Son.....	July 4, 1908.	Schedule.
Saguenay River. Dredging.....	The General Construction Company.....	Aug. 31, 1908	"
Three Rivers. ".....	L. Cohen & Son.....	Oct. 1, 1903.	"
Vaudreuil. ".....	Dominion Dredging Co., Ltd.....	July 27, 1908	"
Yamachiche. ".....	The W. J. Poupore Co., Ltd	" 14, 1908.	"
Yamaska. ".....	" " ".....	" 14, 1908	"
<i>Ontario.</i>			
Blind River. Dredging.....	The C. S. Boone Dredging & Cons. Co., Ltd	June 26, 1908	"
Bowmanville. ".....	Frank Simpson.....	Sept. 19, 1908.	"
Burlington. ".....	W. E. Phin.....	July 16, 1908	"
Burlington Channel. Hire of plant & repairs south pier.....	Joseph Battle.....	May 27, 1908.	per diem 65 00
Cheverie. Extension to wharf.....	H. MacAloney.....	Dec. 16, 1908.	4,285 00
Cobourg. Dredging.....	W. E. Phin.....	July 16, 1908.	Schedule.
" Two breakwaters in the harbour.....	The Randolph Macdonald Co., Ltd.....	Aug. 18, 1908	139,000 00
Collingwood, Harbour. Dredging.....	The C. S. Boone Dredging & Cons. Co., Ltd.....	July 17, 1908.	Schedule.
Dark Channel. Dredging.....	R. Weddell & Co.....	June 26, 1908	"
Goderich. ".....	W. L. Horton.....	Aug. 12, 1908.	"
Hamilton. ".....	" " ".....	July 16, 1908.	"
Jackfish Bay. ".....	The Great Lakes Dredging Co., Ltd.....	Aug. 9, 1908.	"
Kincardine. ".....	W. L. Horton.....	Oct. 12, 1908.	"

9-10 EDWARD VII., A. 1910

No. 1—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Name of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS— <i>Continued.</i>			\$ cts.
<i>Ontario—Continued.</i>			
Kingston, River St. Lawrence. Improvements in the channel...	Frank Gilbert.....	Feb. 1, 1909.	"
Lion's Head. Extension to wharf.....	Kastner & Porter.....	" 16, 1909.	4,800 00
Little Current. Dredging.....	The C. S. Boone Dredging & Cons. Co., Ltd.....	June 26, 1908.	Schedule.
McGregors Creek. Extension 300 feet, sheet piling.....	John Flook.....	Oct. 10, 1908.	per ft. 13 50
McKellar River. Dredging.....	The Great Lakes Dredging Co., Ltd.....	July 14, 1908.	Schedule.
Meaford. ".....	R. Weddell & Co.....	June 26, 1908.	"
Midland. ".....	The Canadian Dredge & Cons. Co., Ltd.....	Aug. 21, 1908.	"
Mission River. " (Terminal Basin.).....	The Great Lakes Dredging Co., Ltd.....	Feb. 27, 1909.	"
Newcastle. Dredging.....	F. Simpson.....	Sept. 10, 1908.	Schedule of rate.
Nepigon River. ".....	Great Lakes Dredging Co., Ltd.....	Oct. 9, 1908.	"
Owen Sound. ".....	A. F. Bowman.....	July 13, 1908.	"
Nigger Island. ".....	R. Weddell & Co.....	June 26, 1908.	"
Pelee Island. Extension to west wharf.....	A. McCormick & Son.....	Dec. 31, 1908.	4,800 00
Penetanguishene. Dredging.....	A. F. Bowman.....	July 13, 1908.	Schedule.
Pictou. ".....	The Windsor Dredging Co., Ltd.....	Oct. 1, 1908.	4,200 00
" ".....	" ".....	Aug. 20, 1908.	Schedule of price.
Point Edward. ".....	Manley & Co.....	July 8, 1908.	"
Port Arthur. ".....	Great Lakes Dredging Co., Ltd.....	Dec. 8, 1908.	"
Port Burwell. ".....	Canada Construction & Dredging Co., Ltd.....	July 7, 1908.	"
Port Elgin. ".....	W. L. Horton.....	Aug. 12, 1908.	"
Port Stanley. Breakwater. Protection works.....	Haney & Miller.....	Oct. 28, 1908.	2,100 00
" Construction of 6 groynes.....	J. H. Smale.....	Feb. 1, 1909.	6,535 00
Rondeau. Breakwater and dredging.....	Wm. Birmingham.....	Mar. 25, 1909.	229,000 00
" Dredging.....	Canada Construction & Dredging Co., Ltd.....	July 7, 1908.	Schedule.
Sand Point. Extension to public wharf.....	J. J. Fallon.....	Apr. 7, 1908.	2,030 00
Spanish River. Dredging.....	The C. S. Boone Dredging & Cons. Co., Ltd.....	Sept. 5, 1908.	Schedule.
Summerstown. ".....	The Randolph Macdonald Co., Ltd.....	July 7, 1908.	"
Telegraph Island. ".....	R. Weddell & Co.....	June 26, 1908.	"
Thames River. ".....	Manley & Co.....	July 8, 1908.	"
" Approach to wharf.....	Chatham Dredging Co.....	" 8, 1908.	per cu. yd 12½
Thornbury. ".....	R. Weddell & Co.....	June 26, 1908.	Schedule.
Tiffin. ".....	Canadian Dredge & Cons. Co., Ltd.....	Aug. 4, 1908.	"
Toronto. ".....	The Windsor Dredging Co., Ltd.....	" 20, 1908.	"
" Harbour. New western entrance.....	R. Weddell & Co.....	May 15, 1908.	495,000 00
" Island. Extension to breakwater.....	F. R. Miller & R. Cumming.....	June 8, 1908.	39,000 00
Trenton Harbour. Dredging.....	R. Weddell & Co.....	" 26, 1908.	Schedule.
Victoria Harbour. ".....	Canadian Dredge & Construction Co., Ltd.....	Aug. 4, 1908.	"
Waubausene. ".....	Penetanguishene Dredging Co.....	" 28, 1908.	"
Warton. ".....	A. F. Bowman.....	July 13, 1908.	Schedule of price.
Wingfield. ".....	The C. S. Boone Dredging & Construction Co., Ltd.....	June 26, 1908.	"
<i>Manitoba.</i>			
St. Andrews Rapids. Supply of cement.....	The Owen Sound Portland Cement Co., Ltd.....	May 26, 1908.	Per bag 0 61
" Movable dam steel service and highway bridge.....	Canada Foundry Co., Ltd.....	Sept. 10, 1908.	548,000 00
Lock. Red River. Gates.....	J. Burns.....	Nov. 24, 1908.	32,970 00

## SESSIONAL PAPER No. 19

No. 1—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Name of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS— <i>Continued.</i>			\$ cts.
<i>Vessels, Dredges and Plant.</i>			
Construction of one small Fitzgibbon boiler for sounding scow.....	Powers & Co .....	Apr. 8, 1908.	1,095 00
Construction of a steel hopper barge for dredge 'Sir Wilfrid.' .....	Collingwood Shipbuilding Co., Ltd. ....	May 4, 1908.	34,000 00
Construction of one steel tug .....	La Compagnie Pontbriand, Ltée .....	" 22, 1908.	46,500 00
" " .....	New Burrill-Johnson Iron Co., Ltd. ....	June 10, 1908.	46,500 00
" of steel scow for pile driver .....	Beauchemin & Fils, Ltée..	July 14, 1908.	5,600 00
" of equipment for pile driver.....	Mussens, Ltd. ....	" 14, 1908.	2,192 70
" Tug for Last Mountain Lake, Sask. ....	The Polson Iron Works, Ltd. ....	Aug. 25, 1908.	9,750 00
" Steel Tug .....	La Compagnie Pontbriand, Ltée .....	Sept. 10, 1908.	46,500 00
" 2 Side hopper scows for Last Mountain Lake, Sask. ....	Burns & Waters .....	Oct. 5, 1908.	4,970 00
" of a wooden hull for dredge Last Mountain Lake, Sask. ....	" .....	" 8, 1908.	5,400 00
" Scotch Marine Return Tubular Boiler for dredge 'Industry.' .....	Polson Iron Works, Ltd. ....	Feb. 19, 1909.	9,300 00
" Double Cylinder engine for dredge No. 3.....	Victoria Foundry Co. ....	" 22, 1909.	2,185 00
" Two hopper wooden dumping scows. ....	La Compagnie Pontbriand, Ltée.....	Mar. 17, 1909.	5,590 00



## SESSIONAL PAPER No. 19

10 Municipality of Kent's Co., N. B.	Sale of wharf, &c., Richibucto, N. B.	Site Ex'g. Wharf	2 1/2 acres	1,500 00
11 G. Robertson.	Land—Vancouver, B. C., Lots 13, 14.			75,000 00
23 J. O. Murray, et ux.	Sale of old saw-dust wharf and mill property at Richibucto, N. B.			
26 Allen McIntosh, et ux.	Land—Dresden, Ont., Lots 1 and 4	Gov't. purposes.	7 1/2 acres	5,000 00
28 R. H. Watson, et ux.	Land—St. Catharines, Ont.	Wharf.		2,000 00
28 Marcelline Niles, et vir.	Land—Capo Paul, N. B.			1,200 00
1 Jos. Côté.	Land—St. Anne de Beaupré, Que., Lot 23		6 acres	310 00
7 Ann Platt.	Land—Portage la Prairie, Man.		6,500 sq. ft.	300 00
10 John Reid, et ux.	Land—Lorneville, N. B.	Gov't. purposes.	1 1/2 acres	1 00
13 John Richardson, et ux.	Land—Elora, Ont., lot 53	Breakwater	1 1/2 acres	200 00
20 Geo. Forbes, et ux.	Land—Vernon River, P. E. I.	Site Pub. Building		380 00
20 Rust. T. Gauthreau.	Land—Gautreau Village, N. B.	Approach to wharf		1 00
20 D. M. Gauthreau.	" "	Gov't. purposes.		6 58
20 Jas. Powell.	" "		0 094 acre	0 15
20 S. Melanson, et ux.	" "		0 092 acre	23 77
20 Alpha LeBlanc.	" "		0 187 acre	19 00
20 F. D. Bellevue.	" "		1 1/2 acre	4 16
20 V. & A. LeBlanc.	" "		0 0065 acre	49 00
20 Juddens LeBlanc.	" "		0 0065 acre	
20 Aimé Boucher.	" "		0 074 acre	
23 Joseph Audet.	Land—Pierreville, Que. Cadastral lots Nos. 1011 & 1012	Site Pub. Building	50 x 240 ft.	5,200 00
23 J. T. Horne.	Land and wharf, St. Charles, Co. of St. Hyacinthe, Que.	Wharf.	5,806 sq. ft.	300 00
24 Angus Brousseau.	Land and land covered with water, Kamistiquia River, Ont.	Improvements.	1 1/2 acres.	180 00
25 James K. Phillips.	Bill of sale 'Industry.	Right of way		Free grant.
25 James K. Phillips.	Bill of sale 'Scow No. 3.	Gov't. purposes.		147,378 78
3 Jas. Duncaster, et ux.	Land—Amherst Point, N. S., Lot 'A'			10,000 00
6 T. S. Corbett.	Land—Amherst Point, N. S., Lot 'B'	Wharf.		
6 Solomon C. Clark, et al.	Land—Hillborough, P. E. I.		1 1/2 rods	17 50
19 John W. Berry.	Land and wharf at Port Huron, Fraser River, B. C.		1 1/2 rods	10 00
27 James Toddlen.	Land—Atlin, B. C., Lot 15 and easterly 5 ft. of lot 14.			550 00
10 Helbert, et al.	Land—Richibucto Cape, N. B.	Site Pub. Building		2,000 00
8 John A. Mitchell.	River lot at Victoria, Alta.	Breakwater		1,650 00
8 L. S. Barnes.	Land—Amherst Point, N. S.	Telegraph office		125 00
10 Corporation of Marieville.	Land—Prince Albert, Sask.	For wharf.	1 acre.	300 00
11 Drever estate.	Land at Ormoco, N. B.		1 1/2 rods.	50 00
12 John E. Stocker, et ux.	Land—Moosejaw, Sask.	Site Public wharf.		1,500 00
13 Pat. Navin, estate.	Land—Grand Forks, B. C., Lots 18 and 19, block 93.		140 sq. yds.	1,600 00
14 Sarah N. Hall.	Land—Oronoto, N. B.	Site Pub. Building		150 00
16 Town of Gananogue.	Land—Port of lots 13, 14, Block O, Gananogue, Ont.			20,000 00
22 J. E. Stocker.	Land—Oronoto, N. B.	Site for wharf	720 sq. ft.	3,000 00
21 Stony Lake Cottage Association Ltd.	Land—Juniper, Ont.			1 00
1909.		Approach to wharf.	1/2 acre.	1 00
Jan. 22 James P. Porter.	Land—Bluff Head, N. S.	Breakwater	1/2 acre	5 00
22 Wm. Cleland.	Land—Bluff Head, N. S.		1/2 acre	35 00

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No 2.—STATEMENT of properties purchased or sold by the Department of Public Works of Canada, &c.—*Continued.*

Date of Conveyance.	Vendors.	Purchasers.	Description of Property.	For what Purpose.	Area.	Price.
1909.						\$ cts.
Jan.	25 Margaret Ogilvie, <i>et al.</i>	His Majesty	Land—Ottawa, Ont., Lot 39, 1st Concession	Testing of fuel	.....	2,000 00
"	26 W. J. Long	"	Land—Elmwood, Man., Lot 4.	Site Pub. Building	.....	1,500 00
"	27 W. H. Orr	"	Land—Elmwood, Man., Lots 1, 2, 3.	"	.....	4,000 00
Feb.	27 James T. Johnson	"	Land—St. André d'Argenteuil, Que.	For wharf	12,928 sq. ft.	400 00
"	22 M. A. & G. Robertson.	"	Land—Rothessay, N.B.	"	9½ acre.	2,000 00
"	27 Toronto Gen'l. Trust Corporation.	"	Land—Lakeport, Ont., Part of lot 1, Concession 'D'	"	6.6 acre.	1,600 00
March	1 T. R. Anderson.	"	Land—Sackville, N.S.	"	16.6	800 00
"	1 Anglican Diocese of Saskatchewan.	"	Land—At Prince Albert, Sask., Parts of river lots 55 & 56	Public Building	.....	15,477 50
"	12 His Majesty	H. Sanders and D. MacLachlan.	Land—At Marble Mountain, N.S.	Private enterprise.	Road 15 ft. wide, Free.	Free.
"	15 L. Hutchinson	R. McDonald	Land—At Marble Mountain, N.S.	"	1 of acre	1,200 00
"	15 Bank of Ottawa.	His Majesty	Land—Uxbridge, Ont., Lot 4, block G.	Site, Pub. Building.	.....	3,000 00
"	18 J. C. Starr, <i>et al.</i>	"	Land—Kemptville, Ont.	"	.....	4,000 00
"	22 Methodist Church (Trustees)	"	Land—Wolfville, N.S.	"	.....	1,000 00
"	24 Jas. and John Watt.	"	Land—Essex, Ont., Lots 293, 295.	"	36 per. 26 sq. yds.	700 00
"		"	Land—Fergus, Ont., Village lot No. 1.	"	.....	Free.

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, July 2, 1909.J. A. CHASSÉ,  
*Law Clerk.*



## SESSIONAL PAPER No. 19

## No. 3.—STATEMENT of Properties Leased to and by the Department of Public Works of Canada, from April 1, 1908, to March 31, 1909.

Date of Lease.	Lessor.	Lessee.	Property Leased.	For what Purpose.	Duration of Lease.	Annual Rental.
1908.						\$
April	1 His Majesty	Auguste Laplante, Canadian Fish and Transportation Co., Ltd.	Premises No. 452, Sussex street, Ottawa, Ont.	Private enterprise	Monthly tenancy	20 00 p. m.
"	2 "	"	Privilege to erect shed and pier on Government wharf at Blind River, Ont.	"	"	"
"	16 Imperial Realty Co., Ltd.	His Majesty	"Canadian Building," eastern half of, Ottawa, Ont.	"	During pleasure.	1 00 forever
"	25 His Majesty	Mrs. C. W. Edwards	Land at Junction street, Ottawa, Ont.	Auditor General and Interior Dept.	5 years	15,206 90 p. a.
"	25 J. N. Tice	His Majesty	Building at Stottler, Alta.	Private enterprise	During pleasure.	1 00 p. a.
"	27 Can. Pacific Ry. Co.	"	Site at Swift Current, Sask.	Trucking purposes	7 months.	25 00 p. m.
"	29 His Majesty	Beloni Fournier	Land, Pond Creek, River Ottawa, Hull, Que.	Trucking building	1 year.	1 00 p. a.
May	1 "	F. Bertrand	Premises No. 488, Sussex street, Ottawa, Ont.	Private enterprise	During pleasure.	1 50 p. a.
"	1 "	Gla. Wackid	Premises No. 384.	"	Monthly tenancy	16 00 p. m.
"	1 J. A. Seybold	His Majesty	"Seybold Building," Sparks street, Ottawa, Ont.	"	"	16 00 p. m.
"	1 His Majesty	R. P. Blake	Premises No. 494, Sussex street, Ottawa, Ont.	Customs Dept.	5 years	6,500 00 p. a.
"	13 "	T. Aial and J. T. Durraine	"	Private enterprise	Monthly tenancy	10 00 p. m.
"	13 Rodier Estate	His Majesty	Land, Pond Creek, River Ottawa, Hull, Que.	"	During pleasure.	2 00 p. a.
"	29 Credit Foncier Franco-Canadian.	"	Premises No. 396, St. Antoine street, Montreal, Que.	Detention Hospital.	1 year.	2,000 00 p. a.
June	10 W. J. Baskerville.	"	Rooms, Edmonton, Alta.	Post Office purposes.	"	852 00 p. a.
July	18 His Majesty	J. H. Dansereau	Premises Nos. 357-359 Sussex street, Ottawa, Ont.	Geological Museum.	2 years	800 00 p. a.
"	22 Jas. Dickson	His Majesty	Lands, St. Christophe Island, P. Q.	Milit. purposes.	15 years.	50 00 p. a.
"	29 His Majesty	J. Carisse	Right of way, Main à Dieu, N. S.	Govt. tel., repairs to.	During pleasure.	20 00 p. a.
"	29 "	Mrs. E. D. Gibson	Premises No. 460, Sussex street, Ottawa, Ont.	Private enterprise	Monthly tenancy	3 00 p. m.
Aug.	21 Joseph Lauzon.	His Majesty	Premises No. 485.	"	"	6 00 p. m.
Sept.	1 J. Oment	"	Right of way, Notre Dame de la Salette, Que.	Govt. purposes	1 year.	50 00 p. a.
"	11 O. B. Lafleur and J. F. Valois	"	Rooms, Indian Head, Sask.	Distribution of trees.	3 years	300 00 p. a.
"	21 John C. Brennan.	"	Lachine, P. Q.: Privilege to connect drain pipe.	Govt. purposes	15 years.	160 00 forever.
"	25 J. N. Tice	"	Rooms, "Tralfalgar Building," Ottawa, Ont.	For C. S. C., &c	4 years, 7 mos.	5,700 00 p. a.
"	30 Mrs. Addie Shelyn.	"	Building at Stottler, Alta.	Trucking purposes.	9 months.	25 00 p. m.
Oct.	15 His Majesty	Alp. Julien	Offices, Three Rivers, P. Q.	Govt. purposes.	Monthly tenancy	25 00 p. m.
"	19 C. Jane Swales.	His Majesty	Land at Pond Creek, Ottawa River, Hull, Que.	Private enterprise	During pleasure.	2 00 p. a.
Dec.	3 Miss Barrett.	"	Premises at Hamilton, Ont.	For Post Office Dept.	5 years	840 00 p. a.
"	"	"	Premises No. 716, Queen street E., Toronto, Ont.	Postal Station "C."	Monthly tenancy	65 00 p. m.

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No. 3.—STATEMENT of Properties Leased to and by the Department of Public Works of Canada, &amp;c.—Continued.

Date of Lease.	Lessor.	Lessee.	Property Leased.	For with Purpose.	Duration of Lease.	Annual Rental.
1908.						\$
"	10 Copp, Clark Company.	His Majesty	Lot on Wellington Place, Toronto, Ont.	Storage of pneumatic tubes.	Monthly tenancy 18 months	15 00 p. m. 3,949 59 for whole period. 250 00 p. a.
"	30 Can. Pacific Ry. Co.	"	Quarters for Chinese detention, Vancouver, B.C.		10 years	1 00
Feb. 13 A. Chatelain		"	Premises at L'Original, Ont.	Post Office	1 year	40 08 p. m.
Mar. 11 Can. Gen. Electric Co., Ltd.		"	Land at Toronto, Ont.	Govt. purposes	6 months	40 00 p. m.
" 18 Geo. W. Abbott		"	Premises at Vegreville, Alta.	Immg. purposes	4 months	
" 24 J. W. Hudson		"	Premises at Mortlach, Sask.	"		

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, July 2, 1909.J. A. CHASSÉ,  
*Law Clerk.*

LIST  
OF SOME OF THE  
ACTS OF PARLIAMENT  
PASSED AT THE SESSION OF 1909  
HAVING REFERENCE TO THE  
DEPARTMENT OF PUBLIC WORKS OR WORKS UNDER ITS CHARGE.



List of some of the Public Acts of the Parliament of the Dominion of Canada passed at the First Session of the Eleventh Parliament begun and holden at Ottawa, on the Twentieth day of January, 1909, and closed by Prorogation on the Nineteenth day of May, 1909, and having reference to the Public Works Department or works under its charge (8-9 Edward VII.)—

Subject.	Full Title of the Statutes.	Chapter	Page in Statute.
Sums granted to His Majesty for the financial years ending respectively March 31, 1909, and March 31, 1910, and the purposes for which they are granted.	An Act granting to His Majesty certain sums of money for the public service of the financial years ending respectively March 31, 1909, and March 31, 1910.		
	The Appropriation Act No. 1.....	1	3
	The Appropriation Act No. 2.....	2	51

N.B.—By proclamation, dated June 19, 1908, amended rules and regulations were made for the management and working of the graving dock at Esquimalt, B.C. (*Vide Canada Gazette*, Vol. xlii., p. 64).

By proclamation, dated July 30, 1908, amended rules and regulations for the management and working of the dry dock at Levis, P.Q., were substituted for rules and regulations authorized by O. C., dated August 16, 1899. (*Vide Canada Gazette*, Vol. xlii., p. 317).

By proclamation, dated February 10, 1909, the tariff of tolls to be charged by the Rouge Boom Company, of Calumet, P.Q., for the use of their works during the season of 1909, was approved. (*Vide Canada Gazette*, Vol. xlii., p. 2458).

By proclamation, dated March 6, 1909, the tariff of tolls, proposed to be levied by the French River Boom Company, Limited, for the use of their works during the season of 1909, was approved. (*Vide Canada Gazette*, Vol. xlii., p. 2768).

By proclamation, dated March 13, 1909, the tariff of tolls proposed to be levied by the Upper Ottawa Improvement Company, Limited, for the use of their works during the season of 1904, was approved. (*Vide Canada Gazette*, Vol. xlii., p. 2695).

J. A. CHASSE,  
*Law Clerk.*

DEPARTMENT OF PUBLIC WORKS,  
OTTAWA, July 2, 1909.



# NATIONAL ART GALLERY

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## CURATOR'S REPORT

FOR THE FISCAL YEAR ENDED MARCH 31, 1909





## NATIONAL ART GALLERY.

D. EWART, Esq., I.S.O.,  
Chief Architect.

SIR,—I have the honour to report the following additions, by purchase, to the collection during the fiscal year ended March 31, 1909, viz.:—

## OIL PAINTINGS.

Klaasje, by Curtis Williamson, R.C.A. . . . .	\$1,000
Landing of H.R.H. the Duke of Cornwall and York at Quebec, by John Hammond, R.C.A. . . . .	750
Mother and Son, by John Wentworth Russell. . . . .	1,500
Nut Gatherers in the Forest, by Homer Watson, R.C.A. . . . .	2,200
A Midsummer Night, by Archibald Browne. . . . .	700
Early Moonrise in September, by Wm. Brymner, P.R.C.A. . . . .	500
A Dutch Peasant, by J. Y. Beatty. . . . .	500
Le Quai des Grands Augustins, Paris, by J. W. Morrice. . . . .	500
Maison de pêcheurs au Tréport, by Henri Eugène LeSidaner. . . . .	500
Le Port d'Audierne (Bretagne), by Fernand LeGout-Gerard. . . . .	500
The Wayside Cross, by F. MacGillivray Knowles, R.C.A. . . . .	450
After Glow, by G. A. Reid, R.C.A. . . . .	400
Cap Tourmente, by Edmund Morris, A.R.C.A. . . . .	300
Nocturne, by Elizabeth MacGillivray Knowles. . . . .	250
Morning in Spain, by W. H. Clapp. . . . .	260
Kaulhaven Dordrecht, by S. Strickland Tully. . . . .	250
The Chess Problem, by Muriel C. W. Bolton. . . . .	200
Departure of Day, by Harry Britton. . . . .	200
A Muskoka Highway, by F. H. Brigden. . . . .	200
The First Snow, by Maurice Cullen, R.C.A. . . . .	150
A Little Puritan, by Franklin Brownell, R.C.A. . . . .	150
The Prospector, by Charles W. Jeffreys. . . . .	150
The Mill Race, by Mary E. Wrinch. . . . .	100
Rue du Canal, Moret sur Soing, by Clarence Gagnon. . . . .	100
Looking East, by Mary H. Reid, A.R.C.A. . . . .	100
Ombre et Lumière, by Charles Dagnac-Rivière. . . . .	90
Landscape, by J. L. Graham, A.R.C.A. . . . .	150

## SCULPTURE.

Plaster Bust of DeMonts, by Hamilton MacCarthy, R.C.A. . . . .	250
Bronze—Indian Warrior, by A. Phinister Proctor. . . . .	910
Bronze—Prowling Panther, by A. Phinister Proctor. . . . .	325
Bronze—Standing Puma, by A. Phinister Proctor. . . . .	130

9-10 EDWARD VII., A. 1910

## BLACK AND WHITE.

21 etchings, by Clarence Gagnon. . . . .	\$261
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## DECORATIVE ART AND BOOK ILLUSTRATION.

Designs in mural decoration, wall paper and book illustration, in colours and black and white, by Walter Crane. . . . .	511
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During the fiscal year the number of visitors who registered was 10,596.

I have the honour to be, sir,

Your obedient servant,

WALTER R. BILLINGS,

*Acting Curator N.A.G.*

NAMES OF THE CHIEF OFFICERS  
OF THE  
DEPARTMENT OF PUBLIC WORKS  
WITH  
DATES OF APPOINTMENT, Etc., FROM 1841 TO 1909



## NAMES OF THE CHIEF OFFICERS.

The names and dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1909.

Names.	Capacity or Office.	Date of Appointment.	
		Served.	
		From	To
<i>Under Statute 4-5 Vic., Chap. 38.</i>			
CORPORATION BOARD OF WORKS.			
Killaly, Hon. H. H. ....	Chairman .....		
Daly, Hon. D. ....			
Harrison, S. B. ....	Members. ....	Dec. 29, 1841	Oct. 3, 1844
Sullivan, R. B. ....			
Davidson, J., Esq. ....	Secretary .....	Aug. 17, 1841	
Begly, Thomas A. ....	Chief Engineer. ....	" 17, 1841	
Keefer, Samuel. ....	Architect and Assistant		
Rubidge, F. B. ....	Engineer .....	Dec. 15, 1841	
NEW BOARD OF WORKS.			
Killaly, Hon. H. H. ....	Chairman .....		
Daly, Hon. D. ....			
Draper, Hon. W. H. ....	Members .....	Oct. 4, 1844	June 8, 1846
Morris, Hon. W. ....			
Papineau, Hon. D. B. ....			
<i>Under Statute 9th Vic., Cap. 37, &amp;c.</i>			
Robinson, Hon. W. B. ....	Chief Commissioner. ....	June 22, 1846	March 10, 1848
Taché, Hon. E. P. ....	" .....	March 11, 1848	Nov. 26, 1849
Chabot, Hon. J. ....	" .....	Dec. 13, 1849	March 31, 1850
Merritt, Hon. W. H. ....	" .....	April 8, 1850	Feb. 11, 1851
Bourret, Hon. J. ....	" .....	Feb. 12, 1851	Oct. 27, 1851
Young, Hon. John. ....	" .....	Oct. 28, 1851	Sept. 22, 1852
Chabot, Hon. J. ....	" .....	Sept. 23, 1852	Jan. 26, 1855
Lemieux, Hon. F. ....	" .....	Jan. 27, 1855	Nov. 25, 1857
Alley, Hon. C. ....	" .....	Nov. 26, 1857	Aug. 1, 1858
Holton, Hon. L. H. ....	" .....	August 2, 1858	" 6, 1858
Sicotte, Hon. L. V. ....	" .....	" 7, 1858	Jan. 10, 1859
Rose, Hon. John. ....	" .....	Jan. 11, 1859	June 12, 1861
Cauchon, Hon. Jos. ....	Commissioner .....	June 13, 1861	May 23, 1862
Tessier, Hon. U. J. ....	" .....	May 24, 1862	" 27, 1863
Drummond, Hon. L. T. ....	" .....	" 28, 1863	July 23, 1863
Laframboise, Hon. M. ....	" .....	July 24, 1863	March 29, 1864
Chapais, J. C. ....	" .....	March 30, 1864	June 30, 1867
Casgrain, Hon. Chas. Eus. ....	Second Commissioner. ....	July 9, 1846	Feb. 29, 1848
Cameron, Hon. M. ....	Assistant Commissioner. ....	March 11, 1848	" 1, 1850
Wettenhall, James, Esq. ....	" .....	Feb. 2, 1850	April 16, 1850
Bourret, Hon. Jos. ....	" .....	April 17, 1850	Feb. 11, 1851
Killaly, Hon. H. H. ....	" .....	Feb. 12, 1851	May 6, 1859
Keefer, Samuel. ....	Deputy Commissioner .....	May 6, 1859	March 7, 1864
Trudeau, Toussaint. ....	" .....	March 8, 1864	May 29, 1868
Begley, Thos. A. ....	Secretary .....	Feb. 10, 1841	Oct. 31, 1858
Trudeau, Toussaint. ....	" .....	Dec. 13, 1859	March 7, 1864
Braun, Frederick. ....	" .....	March 8, 1864	July 1, 1867
Page, John .....	Chief Engineer. ....	Oct. 31, 1873	Oct. 1, 1879

9-10 EDWARD VII., A. 1910

The names and dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1909—*Continued.*

Names.	Capacity or Office.	Date of Appointment.			
		Served.			
		From		To	
<i>Under Statute 31 Vic., Cap. 12.</i>					
McDougall, Hon. Wm.	Minister	July 1, 1867	Dec. 7, 1869		
Langevin, C. B., Hon. Hector L.	"	Dec. 8, 1869	Nov. 6, 1873		
Mackenzie, Hon. Alexander	"	Nov. 7, 1873	Oct. 16, 1876		
Tupper, C.B., K.C.M.G., Sir Charles	"	Oct. 17, 1878	May 19, 1879		
Langevin, C.B., K.C.M.G., Sir Hector L.	"	May 20, 1879	Aug. 11, 1891		
Smith, Hon. Frank	Acting Minister.	Aug. 14, 1891	Jan. 10, 1892		
Onimet, Hon. Joseph Aldéric	Minister	Jan. 11, 1892	April 30, 1896		
Desjardins, Hon. Alphonse	"	May 1, 1896	July 12, 1896		
Tarte, Hon. J. Ismel.	"	July 13, 1896	Oct. 21, 1902		
Sutherland, Hon. James	"	Nov. 11, 1902	May 3, 1905		
Hymn, Hon. Charles S.	"	May 22, 1905	Aug. 29, 1907		
Pugsley, Hon. Wm.	"	Aug. 30, 1907			
Trudeau, Toussaint	Deputy Minister	May 29, 1878	Oct. 1, 1879		
Baillargé, G. F.	"	Oct. 4, 1879	Dec. 31, 1880		
Gobeil, A., I.S.O.	"	Jan. 1, 1891	June 2, 1908		
Hunter, James B.	"	July 1, 1908			
Braun, Frederick	Secretary	" 1, 1867	Sept. 30, 1879		
Chapleau, S.	"	Oct. 1, 1879	Nov. 4, 1880		
Ennis, F. H.	"	Nov. 5, 1880	Jan. 13, 1885		
Gobeil, A.	"	Jan. 23, 1885	Dec. 31, 1890		
Roy, E. F. E.	"	" 1, 1891	" 31, 1900		
Gélinas, Fred.	"	June 8, 1901	July 2, 1908		
Tessier, Napoléon	"	Aug. 11, 1908			
McPherson, D. A.	Assistant Secretary	Jan. 18, 1891	April 11, 1893		
Desrochers, Rodolphe, Charles	"	" 8, 1896			
Page, John	Chief Engineer	July 1, 1868	Oct. 1, 1879		
Perley, H. F.	"	Nov. 25, 1880	July 10, 1891		
Coste, Louis	"	July 26, 1892	March 18, 1899		
Laflour, E. D.	"	Jan. 7, 1905			
Scott, Thos. S.	Chief Architect	May 26, 1871	Oct. 30, 1881		
Fuller, Thomas	"	Oct. 31, 1881	June 30, 1897		
Ewart, David, I.S.O.	"	Nov. 2, 1897			

NAMES  
OF THE  
OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS OF CANADA  
ON MARCH 31, 1909  
WITH  
DATES OF APPOINTMENT, SALARIES, ETC.

9-10 EDWARD VII., A. 1910

## OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS.

STATEMENT showing the Names, Dates of Appointment, Salaries, &c., of persons employed on the various Slides and Booms on March 31, 1909.

Name.	Date of Birth.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
<i>Collector of Public Works Revenue.</i>						
E. T. Smith.	Nov. 26, 1846.	Collector, chief clerk.	Ottawa.	July 1, 1889.	\$ 2,150 00 a year.	Date of first appointment to Crown Timber Office, Ottawa, June 23, 1864. Clerk in Dept. of Inland Revenue, July 1, 1870 to June 30, 1889. Transferred to civil list, with rank of first class clerk, January 6, 1892. Chief clerk, July 1, 1906. Employed during the season of navigation for eight months each year. Date of first appointment, May 26, 1864. Timber counter, Ottawa, for Dept. of Inland Revenue, January 7, 1884, to June 30, 1889.
James Steen.	June 17, 1839.	Boatman.	"	" 12, 1889.	70 00 a month.	Employed during the season of navigation for eight months each year.
J. Brassard.	Jan. 9, 1854.	"	"	Mar. 1, 1901.	65 00 "	
<i>Saguenay District.</i>						
G. Bilodeau.	Jan. 29, 1841.	Boom master.	Chicoutimi.	May 1, 1906.	75 00 "	
Arm. Ouellet.	June 15, 1879.	" keeper.	"	" 1, 1906.	40 00 "	
William Dallaire.	Oct. 8, 1857.	"	"	Apr. 1, 1907.	50 00 "	
Willie Dallaire.	Dec. 28, 1882.	"	"	May 1, 1906.	40 00 "	
<i>St. Maurice District.</i>						
L. P. Dallaire.	June 11, 1856.	Paymaster.	Three Rivers.	May 1, 1898.	95 00 a year.	
Joa. Pagé.	July 7, 1845.	Boom master.	Mouth of St. Maurice.	Dec. 10, 1879.	75 00 a month.	
John Dick.	Apr. 15, 1848.	Asst. boom master.	Three Rivers.	May 21, 1898.	75 00 "	
H. Bourassa.	Aug. 13, 1859.	"	Ste. Flore.	Dec. 1, 1906.	52 00 "	
Moise Musson.	Dec. 28, 1846.	"	Grandes Piles.	Apr. 18, 1898.	75 00 "	
N. Lyburner.	July 22, 1850.	Boom master.	Shawenigan Falls.	July 1, 1896.	75 00 "	
Napoléon Lapointe.	Mar. 15, 1872.	"	Shawenigan Bay.	Nov. 12, 1906.	75 00 "	
Pierre Duchaine.	Oct. 8, 1856.	"	Grand Mère.	May 7, 1907.	75 00 "	



## SESSIONAL PAPER No. 19

Ottawa District.		Neneastle District.		Richieu District.		Burlington Channel Swing Bridge.	
Feb. 24, 1846.	Superintendent.	Feb. 13, 1853.	Deputy slide master.	Mar. 1, 1857.	Carillon.	June 1, 1857.	2,900 00 a year.
Jan. 28, 1844.	Accountant.	June 17, 1840.	Boom master.	Mar. 21, 1878.	Gatineau.	Mar. 21, 1878.	1,400 00 "
June 27, 1845.	Asst. engineer.	Nov. 6, 1829.	Deputy slide master.	Aug. 1, 1880.	Chaudière.	Aug. 1, 1880.	5 00 a day.
Apr. 25, 1849.	Clerk.	May 6, 1843.	"	April 1, 1889.	Hull.	April 1, 1889.	3 00 "
May 23, 1850.	Messenger.	Oct. 27, 1842.	"	Nov. 7, 1892.	Châte.	Nov. 7, 1892.	1 75 "
		June 7, 1836.	"	Jan. 1, 1892.	Arnprior.	Jan. 1, 1892.	
		Mar. 26, 1829.	Boom master.	June 1, 1897.	Springtown.	June 1, 1897.	1 40 "
		" 27, 1858.	Slide master.	Mar. 10, 1888.	High Falls.	Mar. 10, 1888.	500 00 a year.
		Jan. 7, 1860.	Deputy slide master.	Sept. 7, 1881.	Portage du Fort.	Sept. 7, 1881.	3 00 a day.
		April 2, 1849.	"	Mar. 1, 1900.	Black River.	Mar. 1, 1900.	1 75 "
		May 19, 1848.	"	Jan. 19, 1900.	Lower Petawawa.	Jan. 19, 1900.	1 50 "
		Apr. 28, 1843.	"	June 2, 1905.	Upper Petawawa.	June 2, 1905.	2 50 "
		May 3, 1843.	"	Sept. 2, 1879.	Mountain.	Sept. 2, 1879.	25 00 a month.
		" 3, 1861.	"	Mar. 1, 1901.	Calumet.	Mar. 1, 1901.	1 50 a day.
		July 27, 1851.	"	Apr. 10, 1899.	Conlang.	Apr. 10, 1899.	2 00 a year.
		June 13, 1851.	"	Mar. 1, 1904.	Des Joachims.	Mar. 1, 1904.	2 00 a day.
		Dec. 16, 1842.	"	May 1, 1897.	Dumoulin.	May 1, 1897.	2 00 "
		July 6, 1850.	In charge.	Apr. 1, 1901.	Cedar Lake Dam.	Apr. 1, 1901.	2 00 "
		Nov. 13, 1844.	Deputy slide master.	" 3, 1905.	Crooked Chute.	" 3, 1905.	2 50 "
		" 25, 1859.	"	" 1, 1865.	Chenaux.	" 1, 1865.	100 00 a year.
		Nov. 2, 1867.	Slide master.	Nov. 15, 1896.	Fenelon Falls.	Nov. 15, 1896.	100 00 "
			"	Feb. 6, 1907.	Burligh Falls.	Feb. 6, 1907.	100 00 "
		Nov. 25, 1860.	Boom master.	July 26, 1897.	Belœil Station.	July 26, 1897.	100 60 "
		July 6, 1837.	Bridge attendant.	Sept. 19, 1896.	Burlington.	Sept. 19, 1896.	650 00 "
		June 4, 1846.	Bridge assistant.	July 1, 1902.	"	July 1, 1902.	1 65 a day.

\* Appointed Accountant, October 4, 1904.

9-10 EDWARD VII., A. 1910

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS.  
STATEMENT showing the Names, Dates of Appointment, Salaries, &c.—Continued.

Name.	Date of Birth.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
<i>Burlington Channel Steep Bridge.—Continued.</i>						
H. Lampman.....	Dec. 14, 1863.	Bridge assistant.....	Burlington.....	Sept. 8, 1902..	1 65 per day.	Employed nine months.
Jas. Eustice.....	Feb. 27, 1872	" ".....	" ".....	" 19, 1896..	1 65 " "	" "
<i>Yanaska Lock.</i>						
O. Minsau.....	July 4, 1844	Lock keeper.....	Yanaska.....	Sept. 1, 1885..	75 00 a month.	" "
H. Lambert.....	Aug. 20, 1844	" ".....	" ".....	July 1, 1897..	40 00 " "	" "
<i>Rivière du Lièvre Lock.</i>						
Hugh R. Gorman.....	Sept. 20, 1842	Lock master.....	Rivière du Lièvre.....	April 15, 1897..	480 00 a year.	Employed eight months.
Charles Brazeau.....	Dec. 25, 1862.	Labourer.....	" ".....	March 3, 1902.	35 00 a month.	
<i>Rivière Saint-Louis, Feder.</i>						
Julien Monpétié.....	Mar. 4, 1866.	Gate keeper.....	Rivière St. Louis.....	May 11, 1903..	10 00 a month.	

JOS. VINCENT.

NAMES  
OF  
PERSONS EMPLOYED ON THE VARIOUS GRAVING DOCKS  
ON MARCH 31, 1909  
WITH  
DATES OF APPOINTMENT, SALARIES, ETC.

9-10 EDWARD VII., A. 1910

## GRAVING DOCK EMPLOYEES.

STATEMENT showing the names, Dates of Appointment, Salaries &amp;c., of persons employed on the various Graving Docks, March 31, 1909.

Name.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
<i>Esquimaux Graving Dock, British Columbia.</i>					
J. A. Gould	Dockmaster	Esquimaux	June 20, 1906.	\$ 150 00 a month.	
John Jeffcott	Engineer.	"	Jan. 4, 1901.	120 00 "	
F. N. Jones	Assistant engineer	"	" 8, 1901.	80 00 "	
A. D. Grieve	Carpenter	"	Dec. 1, 1878.	115 00 "	
A. Young	Labourer	"	June 1, 1903.	60 00 "	
J. Stock	"	"	July 1, 1894.	60 00 "	
Chas. Jordan	"	"	" 1, 1901.	65 00 "	
G. Springer	"	"	April 1, 1903.	60 00 "	
Joseph Appleby	Night watchman	"	Jan. 1, 1909.	60 00 "	
<i>Levis Graving Dock.</i>					
Alf. Sampson	Dockmaster	Levis	Feb. 15, 1900.	1,750 00 a year.	
W. McDougall	Mechanical engineer.	"	June 1, 1888.	75 00 a month.	
T. Despres	Asst. mechanical engineer	"	July 21, 1901.	60 00 "	
Casimir Bourassa	Fireman.	"	Feb. 15, 1907.	40 00 "	
<i>Kingston Graving Dock.</i>					
F. S. Rees	Dockmaster	Kingston	Apr. 1, 1897.	1,400 00 a year.	
James Gilbe	1st engineer.	"	Nov. 1, 1905.	80 00 a month.	
Wm. Geoghegan	Fireman	"	July 1, 1892.	50 00 "	
C. Staley	Watchman	"	" 1, 1892.	50 00 "	

JOS. VINCENT.

LIST  
OF  
ENGINEERS, ENGINEMEN, FIREMEN AND CARETAKERS  
EMPLOYED IN THE  
PUBLIC BUILDINGS THROUGHOUT THE DOMINION ON MARCH 31, 1909  
DATES OF APPOINTMENT, SALARIES, ETC.

9-10 EDWARD VII., A. 1910

## ENGINEERS AND CARETAKERS, PUBLIC BUILDINGS.

STATEMENT showing the Names, &amp;c., of the Engineers, Enginenen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1909.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time Employed each year.	Yearly Salary.
						\$ c.		\$ c.
Amherst.	Post office.	J. H. Chapman.	Jan. 3, 1846.	Caretaker.	Sept. 1, 1901.	33 33	12 months	400 00
Antigonish.	Public building.	J. C. Fraser.	May 31, 1847.	"	Oct. 1, 1907.	33 33	"	400 00
Annapolis.	Post office and custom house.	John McKay.	Oct. 26, 1847.	"	April 1, 1891.	33 33	"	400 00
Arichat.	Public building.	Mrs. A. DeRoche.	June 30, 1848.	"	May 5, 1905.	12 50	"	150 00
Buddick.	"	D. F. McKenzie.	Jan. 29, 1848.	"	Jan. 21, 1899.	20 83	"	250 00
Bridgewater.	"	Thos. Colton.	Jan. 8, 1853.	"	" 19, 1906.	33 33	"	400 00
Canso.	"	R. Sutherland.	Dec. 23, 1853.	"	Oct. 12, 1907.	33 33	"	400 00
Dartmouth.	"	I. C. Henley.	11, 1846.	"	May 22, 1894.	20 83	"	250 00
Digby.	"	F. Deminon.	Nov. 8, 1841.	"	Mar. 14, 1902.	33 33	"	400 00
Guysborough.	"	W. G. Hadley.	" 29, 1844.	"	May 2, 1906.	4 16	"	50 00
Halifax.	Dominion building.	Richard Power.	Aug. 15, 1834.	Engineer.	Oct. 1, 1871.	62 50	"	750 00
"	"	J. DeYoung.	Dec. 8, 1866.	Fireman.	Nov. 28, 1904.	50 00	"	600 00
"	"	J. F. Sullivan.	April 16, 1866.	Asst. Caretaker.	July 1, 1892.	16 60	"	200 00
"	Custom house.	J. Delaney.	May 26, 1852.	Watchman.	Jan. 6, 1906.	30 00	"	360 00
"	Drill hall.	John Crowell.	Feb. 26, 1857.	Engineer.	Dec. 18, 1901.	50 00	"	600 00
"	Armour's.	R. Morrison.	Mar. 26, 1857.	Fireman.	Dec. 4, 1903.	50 00	"	600 00
"	Examining warehouse.	M. O'Neil.	Dec. 30, 1850.	Caretaker.	Oct. 1, 1897.	37 50	"	450 00
"	Immigrant building.	John O'Neil.	April 17, 1856.	Fireman.	Feb. 2, 1897.	55 00	"	660 00
"	New custom house.	J. Barnes.	Dec. 3, 1857.	Engineer.	Jan. 28, 1907.	60 00	"	720 00
"	"	G. Selig.	April 21, 1854.	Fireman.	April 26, 1907.	50 00	"	600 00
"	"	F. Warner.	Oct. 8, 1860.	"	May 1, 1907.	37 50	"	450 00
Inverness.	Public building.	J. R. McLennan.	Jan. 22, 1857.	Caretaker.	Mar. 29, 1908.	33 33	"	400 00
Kentville.	"	W. Hiltz.	April 30, 1864.	"	Nov. 14, 1900.	33 33	"	400 00
Liverpool.	"	James Clements.	June 3, 1895.	"	June 27, 1900.	33 33	"	400 00
Laureburg.	"	J. E. Hebb.	Nov. 3, 1843.	"	" 7, 1895.	25 00	"	300 00
New Glasgow.	Post office.	J. A. Mutch.	Dec. 13, 1840.	"	Oct. 8, 1901.	37 50	"	450 00
North Sydney.	Public building.	Alex. Green.	Feb. 16, 1825.	"	31, 1897.	33 33	"	400 00
Pictou.	Post office and custom house.	Jas. Arbuckle.	Feb. 18, 1836.	"	Dec. 29, 1896.	50 00	"	600 00
Springhill.	Post office.	J. A. Watt.	Sept. 5, 1849.	"	" 1, 1903.	33 33	"	400 00
Sydney Mines.	Public building.	C. McMillan.	Nov. 25, 1867.	"	Jan. 19, 1905.	33 33	"	400 00
Sydney South.	Post office and custom house.	Mrs. M. Keefe.	Jan. 4, 1890.	"	Jan. 13, 1904.	33 33	"	400 00
Truro.	"	Alex. P. Smith.	May 17, 1857.	"	April 1, 1897.	33 33	"	400 00
Windsor.	Post office.	J. A. Mosher.	Nov. 16, 1841.	"	Feb. 13, 1899.	33 33	"	400 00
Yarmouth.	Public building.	W. H. Whelan.	Dec. 23, 1841.	"	Mar. 1, 1906.	33 33	"	400 00

## SESSIONAL PAPER No. 19

Charlottetown	P.E.I.	Dominion building	A. McKenzie	May	12, 1856	" & engineer	Nov.	1, 1895	45 00	12	510 00
"	"	"	E. Cameron	Nov.	2, 1853	Messenger	Jun.	15, 1905	41 67	12	500 00
"	"	"	M. A. Allan	Aug.	1, 1855	"	May	24, 1898	50 00	12	500 00
"	"	"	P. McKenna	Aug.	4, 1841	Watchman	Jun.	13, 1907	50 00	12	500 00
Montague	"	Public building	H. L. Pearson	April	13, 1856	Caretaker	Aug.	27, 1906	13 33	12	150 00
Souris	"	"	Thos. Shea	Aug.	11, 1850	"	Dec.	8, 1905	29 15	12	350 00
St. Stephen	"	"	A. McSwen	Sept.	23, 1835	"	Sept.	1, 1897	33 33	12	400 00
St. John's	"	"	J. L. Houet	July	16, 1846	"	Mar.	26, 1906	33 33	12	400 00
St. John's	"	"	W. Storey	Sept.	15, 1863	"	Sept.	13, 1907	33 33	12	400 00
St. John's	"	"	C. Johnston	May	18, 1856	"	Mar.	27, 1895	25 00	12	300 00
St. John's	"	"	J. C. Leonard	"	"	"	Sept.	15, 1908	33 33	12	400 00
St. John's	"	"	Wm. Gould	Jan.	1, 1853	"	Nov.	26, 1890	33 33	12	400 00
St. John's	"	"	L. Yarka	Dec.	18, 1843	"	July	1, 1900	33 33	12	400 00
St. John's	"	"	E. B. Hicks	Feb.	2, 1835	"	Dec.	23, 1903	12 50	12	150 00
St. John's	"	"	E. B. Hicks	Jan.	11, 1832	"	Jan.	1, 1885	37 50	12	450 00
St. John's	"	"	Patrick Keating	Mar.	13, 1840	"	Oct.	23, 1885	33 33	12	400 00
St. John's	"	"	J. Murray	Aug.	15, 1839	"	Feb.	1, 1904	33 33	12	400 00
St. John's	"	"	Christopher White	July	23, 1858	Eng. & caretaker	April	27, 1894	60 00	12	720 00
St. John's	"	"	J. T. Logan	Nov.	20, 1841	Fireman	Nov.	2, 1885	50 00	12	600 00
St. John's	"	"	James A. Paul	Aug.	1, 1837	Asst. fireman	Dec.	23, 1905	37 50	12	450 00
St. John's	"	"	James Wolfe	Mar.	16, 1850	Caretaker	Oct.	13, 1893	50 00	12	600 00
St. John's	"	"	Edward Haney	Feb.	27, 1849	Engineer	Dec.	1, 1893	60 00	12	720 00
St. John's	"	"	A. E. Thiel	May	14, 1845	Host attendant	Nov.	27, 1892	55 00	12	600 00
St. John's	"	"	James Gray	April	2, 1839	Caretaker	Dec.	6, 1907	50 00	12	600 00
St. John's	"	"	Samuel Topping	April	2, 1839	Fireman	Dec.	12, 1908	50 00	12	600 00
St. John's	"	"	Mrs. N. Dryden	May	21, 1840	Caretaker	May	25, 1887	41 65	12	500 00
St. John's	"	"	P. Arson	Jan.	19, 1839	Fireman	Mar.	26, 1901	25 00	12	300 00
St. John's	"	"	B. Bideau	Jan.	10, 1840	Fireman	Dec.	24, 1908	40 00	12	480 00
St. John's	"	"	Charles Traflet	Jan.	20, 1839	Fireman	Jan.	10, 1909	30 00	12	350 00
St. John's	"	"	A. W. Fields	Mar.	25, 1872	Caretaker	May	1, 1897	33 33	12	400 00
St. John's	"	"	V. Lapointe	Dec.	27, 1839	Caretaker	Oct.	11, 1907	50 00	12	600 00
St. John's	"	"	J. Bourgeois	Jan.	23, 1870	"	Jan.	3, 1906	33 33	12	400 00
St. John's	"	"	T. F. Biss	May	23, 1848	"	April	6, 1904	6 33	12	100 00
St. John's	"	"	G. A. Blais	Sept.	24, 1870	"	Feb.	3, 1903	10 00	12	120 00
St. John's	"	"	Israel Baldwin	Nov.	16, 1839	"	Dec.	4, 1907	40 00	12	480 00
St. John's	"	"	A. Pare	April	27, 1842	"	June	17, 1889	33 33	12	400 00
St. John's	"	"	J. Bellanger	Jan.	19, 1867	"	June	5, 1902	33 33	12	400 00
St. John's	"	"	W. D. Raymond	Jan.	7, 1876	"	Jan.	30, 1905	25 00	12	300 00
St. John's	"	"	J. A. Bouchemin	May	1, 1862	"	April	14, 1905	33 33	12	400 00
St. John's	"	"	J. H. Brown	Oct.	7, 1851	"	May	27, 1903	25 00	12	300 00
St. John's	"	"	J. T. Madore	Dec.	1, 1843	"	Mar.	12, 1902	16 66	12	200 00
St. John's	"	"	A. Courtois	Dec.	1, 1843	"	"	8, 1900	12 50	12	150 00
St. John's	"	"	A. Ratel	Jan.	20, 1839	"	May	7, 1907	40 00	12	480 00
St. John's	"	"	P. O. Robert	Dec.	20, 1845	"	Sept.	1, 1897	33 33	12	400 00
St. John's	"	"	Jos. Brisson	Sept.	17, 1846	"	Jan.	26, 1899	8 33	12	100 00
St. John's	"	"	E. Arbour	Nov.	11, 1869	"	Nov.	22, 1901	12 50	12	150 00
St. John's	"	"	C. Lamontagne	Dec.	8, 1836	"	July	1, 1904	29 00	12	240 00
St. John's	"	"	F. X. Muile	May	12, 1856	"	Mar.	17, 1908	33 33	12	400 00
St. John's	"	"	J. T. Murphy	"	6, 1865	Foreman engraver	"	16, 1905	25 00	12	300 00
St. John's	"	"	"	"	"	"	"	2, 1903	108 33	12	1,300 00

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STATEMENT showing the Names, &c., of the Engineers, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1909—Continued.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time Employed each year.	Yearly Salary.
Montreal	Que.	Ed. Lanctot	April 14, 1857	Caretaker.	Dec. 3, 1898	\$ cts. 41 67	12 months	\$ cts. 500 00
"	"	M. Boyer	Feb. 18, 1848	Fireman	Mar. 4, 1882	60 00	12 "	720 00
"	"	Art. Lesieur	June 22, 1868	Hoist attendant	April 8, 1905	50 00	12 "	600 00
"	"	Jos. Forques	May 15, 1871	Fireman	Nov. 2, 1904	50 00	12 "	600 00
"	"	Jos. Langwin	Mar. 16, 1850	Fireman	Oct. 18, 1904	50 00	12 "	600 00
"	"	A. Nuttall	Feb. 15, 1872	Electrician	June 1, 1905	2 25	per day	700 00
"	"	M. Fitzgerald	"	Hoist attendant	Jan. 31, 1907	60 00	12 months	720 00
"	"	J. B. Desjardins	"	Cleaner.	" 26, 1907	45 00	12 "	540 00
"	"	Samuel Lanctot	June 28, 1850	"	Nov. 23, 1905	45 00	12 "	540 00
"	"	P. Prudhomme	Mar. 7, 1854	Hoist attendant	Mar. 19, 1906	50 00	12 "	600 00
"	"	R. Barthe	July 12, 1863	"	May 1, 1906	50 00	12 "	600 00
"	"	G. Labelle	May 14, 1871	"	Sept. 12, 1904	50 00	12 "	600 00
"	"	S. McGarry	June 15, 1873	"	" 12, 1904	50 00	12 "	600 00
"	"	J. Neville	Mar. 18, 1876	"	" 12, 1904	50 00	12 "	600 00
"	"	A. Marchand	"	"	"	50 00	12 "	600 00
"	"	A. Drouin	June 14, 1868	"	Nov. 28, 1904	50 00	12 "	600 00
"	"	Ald. Desjardins	Sept. 3, 1859	Cleaner	June 30, 1905	45 00	12 "	540 00
"	"	F. Nadon	June 15, 1847	"	Dec. 15, 1902	48 00	12 "	576 00
"	"	A. Tremblay	"	Night fireman	"	60 00	8 "	480 00
"	"	A. Barrette	"	Hoist attendant	"	50 00	12 "	600 00
"	"	James Quinn	"	Freight hoist att.	"	50 00	12 "	600 00
"	"	J. E. Lamarche	"	"	"	50 00	12 "	600 00
"	"	F. Gress	Oct. 4, 1857	Engineer	Jan. 1, 1885	60 00	12 "	720 00
"	"	A. Langwin	May 12, 1885	Asst. engineer	April 2, 1907	50 00	12 "	600 00
"	"	L. D. Thibault	Jan. 28, 1861	Electrician	Dec. 15, 1905	70 00	12 "	840 00
"	"	F. X. Lefebvre	Dec. 18, 1859	Asst. electrician	June 28, 1905	65 00	12 "	780 00
"	"	Gisèle Renard	June 24, 1859	Nights	Feb. 2, 1907	65 00	12 "	780 00
"	"	I. Trudeau	Jan. 22, 1863	Caretaker	Oct. 1, 1902	50 00	12 "	600 00
"	"	Oscar Renaud	Feb. 19, 1862	Elevator man	Sept. 15, 1898	50 00	12 "	600 00
"	"	Art. Forget	July 15, 1867	"	Dec. 10, 1893	50 00	12 "	600 00
"	"	L. Brault	Dec. 29, 1854	"	Sept. 1, 1901	50 00	12 "	600 00
"	"	A. Bourassa	June 1, 1837	Freight hoist att.	Aug. 4, 1893	50 00	12 "	600 00
"	"	C. Berthiaume	Nov. 8, 1870	Night watchman	Feb. 2, 1902	50 00	12 "	600 00
"	"	O. de Ladurantaye	"	Pass. hoist att.	April 26, 1906	50 00	12 "	600 00
"	"	C. Vadeboncoeur	May 17, 1842	Freight hoist att.	Feb. 1, 1884	50 00	12 "	600 00





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STATEMENT showing the Names, &amp;c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1909—Continued.

Locality.	Building.	Name.	Date of birth.	Position.	Date of Appointment.	Monthly Salary.	Time Employed each Year.	Yearly Salary.
						\$ cts.		\$ cts.
Ont.								
Almonte	Post Office.	P. Burns	Jan. 28, 1861	Caretaker	Sept. 1, 1907	33 33	12 months.	400 00
Amnrior	Public building	R. B. McCreary	Jan. 11, 1862	"	Mar. 15, 1896	33 33	12 "	400 00
Barrie	Post office	E. Svirguy	Mar. 19, 1847	"	May 1, 1903	33 33	12 "	400 00
Brookville	"	C. F. Gray	Apr. 28, 1861	"	April 27, 1880	37 50	12 "	450 00
Brantford	"	John Square	Apr. 24, 1842	"	Oct. 3, 1903	50 00	12 "	600 00
Bridgeburg	Public building	Wm. Hanna	Aug. 15, 1863	"	"	25 00	12 "	300 00
Burnsby	"	W. W. Allin	Jan. 13, 1850	"	Feb. 10, 1905	33 33	12 "	400 00
Belleville	Post office.	S. Haight	Aug. 26, 1857	Caretaker	Jan. 21, 1901	50 00	12 "	600 00
Berlin	"	J. Clemens	June 21, 1840	"	May 15, 1906	33 33	12 "	400 00
Brampton	"	J. Foster	Sept. 16, 1847	"	Aug. 1, 1906	33 33	12 "	400 00
Carleton Place.	"	Jas. F. Halfpenny	Apr. 17, 1858	"	May 13, 1882	25 00	12 "	300 00
Chatham	"	W. W. Mitchell	May 25, 1848	"	Jan. 7, 1885	41 66	12 "	500 00
"	Armoury.	T. W. Stephenson.	Oct. 9, 1906	"	Oct. 9, 1906	50 00	12 "	600 00
"	Post office.	R. Conroy	Feb. 6, 1845	Fireman	Sept. 3, 1897	33 33	12 "	400 00
"	"	G. A. Gibson	May 29, 1861	Caretaker, &c.	Sept. 3, 1897	4 16	12 "	50 00
"	"	J. Scott	Jan. 21, 1856	"	Feb. 9, 1904	16 66	12 "	200 00
"	"	J. Staples	June 3, 1834	"	Dec. 10, 1906	33 33	12 "	400 00
"	Public building	M. Hart	Jan. 15, 1862	"	July 1, 1908	33 33	12 "	400 00
"	"	Wm. Graham	Dec. 5, 1853	"	"	4 16	12 "	50 00
"	"	D. J. McCallum	April 5, 1834	"	Sept. 21, 1902	37 50	12 "	450 00
Fort-William	"	T. Barrett	June 17, 1861	"	Aug. 1, 1902	33 33	12 "	400 00
Galt	"	R. McLeod	July 30, 1865	"	May 25, 1901	41 66	12 "	500 00
Guelph	"	G. Bissett	April 14, 1851	"	Sept. 1, 1897	33 33	12 "	400 00
Goderich	" &c.	"	"	"	Dec. 10, 1894	50 00	12 "	600 00
Hamilton	Dominion building	Alfred Barnard	Dec. 27, 1847	"	Oct. 1, 1896	50 00	12 "	600 00
"	"	J. Wiggleworth	Aug. 7, 1863	Fireman	Oct. 1, 1896	50 00	12 "	600 00
"	"	Thomas Nicholson	Dec. 17, 1857	Engineman	Mar. 2, 1887	50 00	12 "	600 00
"	Inland revenue building	C. Blackman	May 23, 1850	Caretaker	Jan. 9, 1905	12 00	12 "	144 00
Armoury.	"	A. Geo. Andrews	May 11, 1877	Fireman	Mar. 5, 1905	60 00	12 "	720 00
"	Public building	A. Macdonald	Sept. 22, 1857	Caretaker	Nov. 7, 1906	33 33	12 "	400 00
"	"	John McDonald	June 30, 1841	"	Aug. 20, 1906	33 33	12 "	400 00
"	"	Mrs. J. Link	May 10, 1850	Caretaker	Dec. 7, 1901	50 50	12 "	600 00
"	Royal Military College	T. Harrison	Aug. 21, 1875	Fireman	May 1, 1902	50 50	12 "	600 00
Armoury	"	F. Forsythe	Nov. 15, 1886	Engineer	Feb. 11, 1904	50 00	12 "	600 00
"	Royal Military College	Wm. Hazlett	May 27, 1874	"	Nov. 20, 1900	85 00	12 "	1,020 00

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Kingston	Ont.	J. Quigley	Oct.	30, 1857	Fremantle	June	1, 1903	55	00	12	"	"	650 00
"	"	M. Richmond	2, 1867	"	"	Jan.	26, 1902	50	00	12	"	"	690 00
"	"	L. Cochrane	Mar.	1, 1879	Electrician	July	29, 1902	65	00	12	"	"	790 00
Post office	"	Jas. Kelso	June	21, 1873	Caretaker	May	15, 1905	48	33	12	"	"	590 00
Inland revenue building	"	J. Lawless	"	1833	"	Feb.	8, 1908	33	33	12	"	"	500 00
Custom house	"	M. Mullern	Sept.	4, 1837	"	Sept.	16, 1888	50	00	12	"	"	500 00
"	"	Wm. Greer	Oct.	12, 1839	"	Mar.	16, 1884	33	33	12	"	"	400 00
Post office	"	J. Gilbanks	Dec.	4, 1861	Caretaker	May	31, 1906	33	33	12	"	"	400 00
Drill hall	"	J. E. Rose	Jan.	23, 1871	Engineer	Nov.	2, 1908	60	00	12	"	"	750 00
Post office and custom house	"	Mrs. C. E. Healey	May	29, 1873	Caretaker	Oct.	4, 1900	33	33	12	"	"	400 00
"	"	R. Gott	July	12, 1846	"	"	"	33	33	12	"	"	400 00
"	"	L. A. Gaither	May	13, 1857	"	Mar.	28, 1907	33	33	12	"	"	400 00
"	"	D. Macpherson	April	30, 1851	"	June	13, 1908	33	33	12	"	"	400 00
"	"	John Fawcett	March	14, 1844	"	July	15, 1900	33	33	12	"	"	350 00
"	"	A. Brodie	Sept.	28, 1850	"	Nov.	1, 1898	29	16	12	"	"	400 00
Observatory	"	A. Villeneuve	March	11, 1857	"	Dec.	11, 1905	33	33	12	"	"	650 00
"	"	G. Sparks	Oct.	16, 1858	Engineer	Nov.	14, 1904	33	00	12	"	"	790 00
Public building	"	Sam Lee	"	"	"	"	"	65	00	12	"	"	400 00
Inland revenue building	"	Samuel Hamilton	June	24, 1834	Caretaker	July	7, 1902	33	33	12	"	"	400 00
Post office	"	G. Stenton	Sept.	17, 1847	"	Oct.	29, 1890	33	33	12	"	"	400 00
Custom house	"	Wm. Taylor	Nov.	25, 1839	"	Dec.	7, 1908	33	33	12	"	"	400 00
Post office	"	James Shaw	June	11, 1842	"	Jan.	26, 1899	25	00	12	"	"	500 00
Public building	"	D. Wellbank	Feb.	8, 1840	"	Sept.	12, 1904	33	33	12	"	"	400 00
"	"	D. McKenzie	Sept.	12, 1843	"	April	11, 1902	33	33	12	"	"	400 00
Post office	"	Wm. Armstrong	"	9, 1846	"	May	11, 1906	33	33	12	"	"	400 00
"	"	Jas. Curtis	"	1884	"	June	11, 1888	29	16	12	"	"	350 00
"	"	R. Birks	April	6, 1822	"	May	1, 1905	33	33	12	"	"	400 00
Public building	"	John McLeod	Sept.	14, 1883	"	July	22, 1907	33	33	12	"	"	300 00
"	"	J. H. Dyble	Aug.	25, 1860	"	Sept.	7, 1903	33	33	12	"	"	400 00
Public building	"	P. J. Reine	Sept.	25, 1865	Caretaker	Sept.	25, 1903	33	33	12	"	"	400 00
"	"	R. W. Lewis	Aug.	19, 1893	"	Jan.	8, 1896	33	33	12	"	"	400 00
Post office, &c.	"	J. P. Murray	July	29, 1850	Engineer	"	26, 1900	50	00	12	"	"	500 00
Armoury	"	J. A. Carey	"	4, 1856	Fremantle	"	24, 1908	50	00	12	"	"	500 00
Post office, &c.	"	W. Peel	Nov.	22, 1847	Engineer	Nov.	3, 1908	50	00	12	"	"	500 00
Public building	"	A. Clark	Sept.	14, 1850	Caretaker	Dec.	12, 1904	33	33	12	"	"	400 00
"	"	W. Hoyt	"	"	"	Mar.	16, 1908	33	33	12	"	"	400 00
Public building	"	G. Lutzon	May	25, 1857	"	April	14, 1903	33	33	12	"	"	400 00
Dominion building	"	Wm. J. Johnston	May	12, 1840	"	Oct.	25, 1890	33	33	12	"	"	400 00
Inland revenue building	"	H. E. Hamilton	April	14, 1838	Foreman, engineer	April	13, 1891	100	00	12	"	"	1,200 00
Custom house	"	C. H. Bailie	Sept.	22, 1852	Fremantle	Jan.	18, 1892	55	00	12	"	"	650 00
"	"	H. Drinkwater	Oct.	4, 1874	"	Oct.	16, 1906	55	00	12	"	"	600 00
"	"	Ed. Switzer	"	"	Hoist attendant	Dec.	18, 1901	50	00	12	"	"	600 00
"	"	T. J. Enright	Feb.	10, 1862	Caretaker	Dec.	18, 1906	50	00	12	"	"	600 00
Exchanging warehouse	"	James Cogrove	Sept.	26, 1864	Engineer	Dec.	28, 1874	70	00	12	"	"	840 00
"	"	Ed. Appleton	"	"	"	Sept.	23, 1886	60	00	12	"	"	720 00
"	"	J. Jennings	"	1, 1867	Hoist attendant	May	29, 1907	50	00	12	"	"	600 00
"	"	R. C. Cusack	March	26, 1875	"	Sept.	29, 1907	50	00	12	"	"	600 00
"	"	F. Simpson	Jan.	8, 1869	Watchman	Jan.	1, 1903	50	00	12	"	"	600 00
"	"	Thos. Jones	Nov.	10, 1853	"	April	4, 1902	50	00	12	"	"	600 00

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STATEMENT showing the Names, &c., of the Engineers, Firemen, Caretakers, Hoist Attendants and Watchman employed at Dominion Public Buildings on March 31, 1909.—*Concluded.*

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time Employed each year.	Yearly Salary.
Toronto	Examining warehouse.	Wm. Scott.	Nov. 26, 1872	Watchman.	June 1, 1905	\$ 2 00	12 months.	\$ 24 00.
"	Union station.	J. Gormally.	Sept. 16, 1868	Hoist attendant.	Sept. 31, 1901	50 00	12 "	720 00
"	"	W. P. Murphy.	Feb. 17, 1868	Elevatorman.	Sept. 28, 1903	50 00	12 "	600 00
"	P. O. station.	James Rae.	April 8, 1864	Caretaker.	Jan. 12, 1904	41 66	12 "	500 00
"	Post office.	J. Somers.	Feb. 17, 1864	Engineer.	Oct. 9, 1897	55 00	12 "	660 00
"	"	P. Cassidy.	May 2, 1862	Fireman.	Oct. 8, 1906	55 00	12 "	660 00
"	"	T. Letray.	1858	"	Jan. 10, 1907	55 00	12 "	660 00
"	"	W. J. Graham.	March 16, 1840	"	Oct. 1, 1896	*60 00	12 "	720 00
"	"	J. Devins.	July 18, 1847	Caretaker.	Feb. 3, 1905	33 33	12 "	400 00
Toronto	Drill hall.	Richard Eyre.	Oct. 11, 1849	"	Mar. 25, 1895	55 00	12 "	660 00
"	"	D. Gilman.	Aug. 8, 1867	"	Oct. 1, 1898	70 00	12 "	840 00
"	"	G. Robinson.	Sept. 9, 1858	Caretaker.	July 14, 1908	55 00	12 "	660 00
Trenton	Public building.	David Allan.	May 13, 1844	"	Aug. 31, 1899	33 33	12 "	400 00
Walkerton.	"	Mrs. T. Gibson.	Jan. 21, 1861	"	May 12, 1905	33 33	12 "	400 00
Windsor.	Post office.	I. Balloperche.	Oct. 26, 1848	Engineer.	Dec. 24, 1897	50 00	12 "	600 00
"	"	W. Curtis.	Mar. 6, 1844	Caretaker.	Nov. 9, 1880	33 33	12 "	400 00
"	Drill hall.	W. Wheeler.	Sept. 26, 1874	Engineer.	Jan. 9, 1905	50 00	12 "	600 00
"	Public building.	P. Fisher.	Dec. 12, 1832	Caretaker.	Nov. 19, 1905	16 66	12 "	200 00
"	"	Robert Kerr.	June 6, 1864	Engineer.	Dec. 11, 1901	37 50	12 "	450 00
Wingham.	Armoury.	Jas. Brown.	May 23, 1862	Fireman.	May 19, 1908	50 00	12 months.	600 00
Woodstock.	"	T. Giles.	Mar. 30, 1843	"	Aug. 1, 1897	65 00	12 "	780 00
Brandon.	"	J. S. Telfer.	July 25, 1840	"	July 1, 1904	45 00	12 "	540 00
Portage la Prairie.	"	W. Kidd.	May 11, 1879	"	Mar. 1, 1909	55 00	12 "	660 00
Saskatoon.	Public building.	J. A. S. Chausse.	Aug. 20, 1871	"	Oct. 1, 1908	55 00	12 "	660 00
St. Boniface.	"	W. Harrington.	Sept. 18, 1871	Engineer.	Sept. 29, 1908	60 00	12 "	720 00
Winnipeg.	Custom house.	Jos. Hay.	May 4, 1853	Fireman.	July 20, 1905	80 00	12 "	960 00
"	New Post office.	J. Saunders.	Oct. 25, 1848	"	Nov. 28, 1908	60 00	12 "	720 00
"	"	Wm. Clark.	Oct. 8, 1868	"	July 1, 1908	60 00	12 "	720 00
"	"	N. Thorntson.	Feb. 10, 1872	Elevatorman.	July 10, 1908	60 00	12 months.	720 00
"	"	J. B. Fontaine.	Feb. 21, 1874	"	July 10, 1908	60 00	12 "	720 00
"	"	F. Jenkins.	Oct. 10, 1879	"	July 10, 1908	60 00	12 "	720 00
"	Postal station "B".	Thos. McMichael.	Nov. 6, 1849	Caretaker.	May 16, 1908	60 00	12 "	720 00
"	Public buildings.	A. H. Latour.	Mar. 25, 1876	Electrician.	Sept. 16, 1908	90 00	12 "	1,080 00
"	Old post office.	E. L. Campbell.	Sept. 18, 1882	"	Sept. 16, 1908	80 00	12 "	960 00
"	"	Jas. Rogers.	July 10, 1857	Fireman.	June 27, 1906	65 00	12 "	780 00
"	"	Joseph Cour.	May 10, 1843	Hoist attendant.	Mar. 16, 1887	55 00	12 "	660 00
"	"	A. Boteau.	Sept. 23, 1860	Night watchman.	April 4, 1905	55 00	12 "	660 00

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Winnipeg	Man.	Post office	P. Johnson.	May	31, 1881	Caretaker.	Oct.	19, 1904	40 00	12	months.
"	"	Custom house.	G. K. Williams.	April	16, 1892	Fireman.	April	4, 1904	45 00	12	"
"	"	Public building.	W. M. Johnson.	June	14, 1897	Carpenter.	Sept.	1, 1906	45 00	12	"
Calgary	Alta.	Post office.	J. G. Adamsen.	May	21, 1872	Caretaker.	June	6, 1907	75 00	12	"
"	"	"	W. T. Madden.	"	"	Elevatorman.	"	"	50 00	12	"
Edmonton.	"	Land and registry office.	R. Wylie.	July	30, 1879	"	June	21, 1894	50 00	12	"
"	"	Post office.	E. G. Henry.	Mar.	7, 1858	"	Mar.	9, 1907	2 00 p.d.	12	"
Lethbridge.	"	Public building.	D. Pelletier.	Aug.	4, 1864	Caretaker.	Dec.	17, 1905	45 00	12	"
Medicine Hat.	"	Public building.	Alex. Keith.	Feb.	23, 1884	"	Dec.	4, 1908	50 00	12	"
Red Deer.	"	Court house.	S. M. Hamerman.	July	12, 1835	"	July	20, 1905	55 00	12	"
Muscow.	Sask.	Public building.	R. W. Robertson.	Sept.	12, 1855	"	Sept.	21, 1906	50 00	12	"
Prince Albert.	"	"	R. D. Robertson.	Aug.	18, 1877	"	Jan.	15, 1906	75 00	12	"
"	"	Land office.	W. J. Gore.	July	22, 1863	"	May	6, 1901	50 00	12	"
"	"	"	T. Perkins.	Sept.	14, 1852	"	Sept.	24, 1906	50 00	12	"
"	"	Post office.	John Macdonald.	Nov.	9, 1857	"	"	"	50 00	12	"
Regina.	"	"	T. Jackson.	June	28, 1879	Fireman.	Jan.	13, 1903	50 00	12	"
Saskatoon.	"	Public building.	W. H. Howell.	Dec.	15, 1861	Caretaker.	Dec.	24, 1908	60 00	08	"
Atlin.	B.C.	Public building.	J. A. Fraser.	Jan.	1, 1851	"	June	26, 1901	12 50	12	"
Kamloops.	"	Post office.	J. R. McNabb.	Sept.	6, 1852	"	Sept.	14, 1905	50 00	12	"
Nanaimo.	"	Public building.	J. Thompson.	"	2, 1835	"	May	1, 1897	50 00	12	"
Nelson.	"	"	B. B. Smith.	"	"	"	Mar.	9, 1903	50 00	12	"
New Westminster.	"	Post office.	L. Thornbar.	April	5, 1846	"	July	11, 1906	50 00	12	"
"	"	Indian, &c., building.	A. H. Oakley.	"	"	"	Feb.	2, 1909	50 00	12	"
Rosland.	"	Post office.	H. McQuade.	Dec.	24, 1851	"	Aug.	1, 1906	50 00	12	"
Vancouver.	"	"	A. Chisholm.	Apr.	18, 1851	"	Oct.	1, 1903	50 00	12	"
"	"	"	P. Powers.	Mar.	21, 1836	Watchman.	Feb.	10, 1901	50 00	12	"
"	"	"	G. F. Bosworth.	Oct.	1, 1848	Asst. caretaker.	July	7, 1904	50 00	12	"
Victoria	"	New Dominion building.	Wm. McKay.	Dec.	31, 1857	Caretaker.	Feb.	4, 1898	50 00	12	"
"	"	Dominion building.	T. Campbell.	June	24, 1858	Asst. caretaker.	Oct.	1, 1906	50 00	12	"
"	"	"	W. Dick.	"	"	Fireman.	Oct.	1, 1908	55 00	12	"
"	"	"	W. Robinson.	July	4, 1848	Elevatorman.	Sept.	1, 1907	60 00	12	"
"	"	"	F. T. McIlmoyle.	Dec.	24, 1843	"	Aug.	1, 1907	60 00	12	"
"	"	Old custom house.	Geo. Lyall.	Feb.	12, 1843	Caretaker.	May	8, 1900	60 00	12	"
"	"	Old post office.	W. J. Bowden.	"	"	"	Oct.	1, 1908	240 00	12	"
Lawson.	Y.T.	Post office.	F. Lemieux.	"	"	"	"	"	1,920 00	12	"
"	"	"	J. K. Johnston.	Apr.	17, 1883	Nightman.	Oct.	17, 1904	160 00	12	"
"	"	Administration building.	C. Ferris.	Oct.	7, 1887	Nightman.	June	12, 1906	160 00	12	"
"	"	"	J. Boutin.	Oct.	13, 1876	Caretaker.	Dec.	1, 1901	160 00	12	"
"	"	"	M. A. Misner.	Sept.	6, 1860	Charwomen.	"	"	160 00	12	"
"	"	"	S. S. Conner.	"	"	Nightman.	"	"	1,800 00	12	"
"	"	"	J. Ballantine.	"	"	Fireman.	"	"	1,920 00	12	"
"	"	Commissioner's residence.	N. P. McDonald.	Oct.	8, 1879	Caretaker.	Dec.	1, 1905	160 00	12	"
"	"	"	W. Harlan.	"	"	Nightman.	"	"	160 00	12	"
"	"	"	Mrs. Ida Joffe.	"	"	Charwomen.	"	"	1,920 00	12	"
"	"	Police court.	J. B. De-launiers.	July	12, 1875	Caretaker.	June	1, 1906	160 00	12	"
"	"	Court house.	H. De-Villiers.	May	7, 1872	"	May	21, 1902	160 00	12	"
"	"	"	J. E. De-launiers.	Mar.	25, 1873	Nightman.	June	1, 1906	160 00	12	"
"	"	Public building.	C. J. McLennan.	Dec.	22, 1860	Caretaker.	Oct.	30, 1902	125 12	12	"
White Horse	"	"	"	"	"	"	"	"	1,500 00	12	"

JOS. VINCENT.



OFFICIAL CORRESPONDENCE

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DEPARTMENT OF PUBLIC WORKS

FROM

JULY 2, 1867, TO MARCH 31, 1909





## OFFICIAL CORRESPONDENCE.

LETTERS received and sent from July 2, 1867, to March 31, 1909.

[illegible]

9-10 EDWARD VII., A. 1910

## LETTERS Sent from Chief Engineer's office, from January, 1880, to March 31, 1909.

Year.		Number.
1880.....	From January 10 to June 30.....	418
1880.....	July 1 " 1881.....	1,795
1881.....	" " " 1882.....	2,352
1882.....	" " " 1883.....	2,651
1883.....	" " " 1884.....	3,611
1884.....	" " " 1885.....	3,119
1885.....	" " " 1886.....	2,867
1886.....	" " " 1887.....	3,281
1887.....	" " " 1888.....	3,552
1888.....	" " " 1889.....	4,229
1889.....	" " " 1890.....	3,374
1890.....	" " " 1891.....	3,948
1891.....	" " " 1892.....	4,069
1892.....	" " " 1893.....	4,232
1893.....	" " " 1894.....	3,966
1894.....	" " " 1895.....	4,603
1895.....	" " " 1896.....	4,239
1896.....	" " " 1897.....	4,994
1897.....	" " " 1898.....	4,696
1898.....	" " " 1899.....	5,277
1899.....	" " " 1900.....	7,366
1900.....	" " " 1901.....	4,341
1901.....	" " " 1902.....	6,759
1902.....	" " " 1903.....	4,327
1903.....	" " " 1904.....	5,295
1904.....	" " " 1905.....	5,496
1905.....	" " " 1906.....	8,036
1906.....	" " " to March 31, 1907.....	3,771
1907.....	April 1 " 1908.....	6,456
1908.....	" " " 1909.....	9,275

NOTE.—The letters, including returns, received in the Chief Engineer's office may be estimated at the rate of two received to one sent.

## LETTERS Received and Sent, Chief Architect's office, from January 1, 1880, to March 31, 1909.

	Received.	Sent.
1880—From January 1 to June 30.....		1,273
1880 " " " " 1881.....		2,943
1881 " " " " 1882.....		2,859
1882 " " " " 1883.....	3,538	4,600
1883 " " " " 1884.....	3,806	6,004
1884 " " " " 1885.....	4,500	6,718
1885 " " " " 1886.....	5,075	6,450
1886 " " " " 1887.....	6,816	6,380
1887 " " " " 1888.....	6,947	6,870
1888 " " " " 1889.....	6,484	7,667
1889 " " " " 1890.....	7,448	6,578
1890 " " " " 1891.....		7,751
1891 " " " " 1892.....	6,113	4,260
1892 " " " " 1893.....	7,428	6,453
1893 " " " " 1894.....	6,900	4,517
1894 " " " " 1895.....	7,538	5,327
1895 " " " " 1896.....	7,843	5,783
1896 " " " " 1897.....	10,700	8,200
1897 " " " " 1898.....	10,867	8,547
1898 " " " " 1899.....	10,913	8,762
1899 " " " " 1900.....	12,386	9,878
1900 " " " " 1901.....	12,287	9,860
1901 " " " " 1902.....	12,560	10,330
1902 " " " " 1903.....	13,430	11,106
1903 " " " " 1904.....	14,710	15,590
1904 " " " " 1905.....	15,000	14,300
1905 " " " " 1906.....	15,785	14,785
1906 " " " to March 31, 1907.....	13,768	12,087
1907 " April 1 " 1908.....	17,000	16,340
1908 " " " 1909.....	17,353	16,755